15 February 2013

Senate Finance and Public Administration Committees
PO Box 6100
Parliament House
Canberra ACT 2600
Australia
fpa.sen@aph.gov.au

**Inquiry into the progress in the implementation of the recommendations of the 1999 Joint Expert Technical Advisory Committee on Antibiotic Resistance**

The Cattle Council of Australia and the Sheepmeat Council of Australia welcome the opportunity to provide comment to the inquiry into the progress in the implementation of the Joint Expert Technical Advosiry Committee on Antibiotic Resistance.

As the peak industry bodies for the grass-fed beef cattle sector and sheepmeat sector respectively, the Cattle Council of Australia and the Sheepmeat Council of Australia recognise that the efficacy of antibiotics and their appropriate use, are critical to maintain the health and welfare of livestock.

While the recommendations of the 1999 Joint Expert Technical Advisory Committee on Antibiotic Resistance (JETACAR) were primarily directed to government departments and agencies, and the veterinary profession, industry recognises the importance of cooperation and communication between government, the veterinary profession and industry on this issue. Although, as stated in the 1999 JETACAR Report *"for extensively-raised sheep and cattle, antibiotic use is minimal'*, Cattle Council and Sheepmeat Council wish to inform the Committee of the actions taken by industry in the spirit of the JETACAR recommendations. The peak councils would also like to inform the Committee of some of the aspects of the antibiotic resistance debate that have changed since the JETACAR report was issued.

Yours sincerely

Jed Matz

Chief Executive Officer
Cattle Council of Australia

Ron Cullen

Chief Executive Officer
Sheepmeat Council of Australia

Cattle Council of Australia | Ph: (02) 6269 5600 | Fax: (02) 6273 2397 | cca@cattlecouncil.com.au
Sheepmeat Council of Australia | Ph: (02) 6269 5610 | Fax: (02) 6273 4479 | sca@sheepmeatcouncil.com.au
NFF House, Level 314-16 Brisbane Avenue, Barton ACT 2600 PO Box E10 Kingston ACT 2604

## Cattle Council of Australia

The Cattle Council of Australia (CCA) is the national peak producer organisation representing Australia's grass-fed beef cattle producers. The objective of the Council is to represent and promote the interests of Australian beef cattle producers through wide and regular consultation with, and policy advice to, key industry organisations, relevant Federal Government Departments and other bodies regarding issues of national and international importance to beef cattle producers. CCA has a federated structure, made up of eight State and Territory farmer organisations that in turn have direct producer members. CCA policy is developed by its member organizations which have proportional voting rights based on the numbers of cattle and beef enterprises that they represent in each state.

## Sheepmeat of Australia

The Sheepmeat Council of Australia (SCA) is the national Peak Industry Council representing and promoting the needs of Australia's lamb and sheepmeat producers. SCA represents all sheepmeat producers in Australia and provides an efficient mechanism to bring a diverse range of issues and needs to the policy making process. The objective of the Council is to represent and promote the interests of Australian sheepmeat producers. SCA achieves this by drawing on many formal and informal processes to gather information and develop policy. Principal amongst these is input from SCAs state farming organisation members, which have extensive networks across their jurisdictions. SCA also maintains a high level of communication and co-operation with relevant Government departments and authorities at Federal and State levels, with local government, and with other relevant industry organisations.

## 1. Changing international perspectives on antibiotic resistance

It is not the purpose of this submission to argue the significance of antibiotic resistance to human health and welfare or the significance of animal agriculture to antibiotic resistance in bacteria isolated from humans. A number of international consultations on the use of antibiotics in human medicine and also in veterinary medicine have assisted in defining where the significant issues lie. Approaches to assessing the risk of antibiotic resistance have been developed internationally. Supply chains have set their own standards for responsible use. Together, these have led to a position in Australia in which the medical and animal agriculture communities in Australia are not too far apart in their positions on antibiotic use.

A number of international meetings have been held on antimicrobial resistance and appropriate responses in both medicine and agriculture. The concept of critically important antibiotics has been established. These critically important antibiotics provide a specific treatment, or one of a limited number of treatments, for serious disease. The Joint FAO/WHO/OIE Expert Meeting on Critically Important Antimicrobials was held in 2007.[1] This meeting recognised that some antibiotics were considered critical only by WHO (for use in humans), and others were considered critical only by OIE (for use in animals), and that some were considered to be critical for both humans and animals. The antibiotics considered critically important for both humans and animals were considered to be priorities for resistance surveillance and for implementation of appropriate management measures to maintain the efficacy of the drugs. Prudent use was considered essential for all antibiotics.

The Codex Alimentarius Commission, which develops internationally accepted guidelines and codes of practice in food production has adopted Guidelines for risk analysis of foodborne antimicrobial resistance.[2] These guidelines provide a structured risk analysis framework to address the risks to human health associated with the presence in food and animal feed, including aquaculture, and the transmission through food and animal feed, of antimicrobial resistant (AMR) microorganisms or determinants linked to non-human use of antimicrobial agents.

Supply chains have become more cognizant of antibacterial resistance both in their food products and in their impact on the environment. One example is McDonald's, the quick service restaurant chain, which has recognized the importance of combating antibiotic resistance, and believes that voluntary, market-based actions can complement ongoing activities to address the issue of antibiotic resistance. McDonald's has a policy which represents one such complementary step and is in line

---

[1] FAO/WHO/OIE. 2008. Joint FAO/WHO/OIE Expert Meeting on Critically Important Antimicrobials. Report of a meeting held in FAO, Rome, Italy, 26-30 November 2007. FAO, Rome, Italy, and WHO, Geneva, Switzerland.

[2] Codex Alimentarius Commission (2011) Report of the Fourth session of the Codex ad hoc intergovernmental task force on antimicrobial resistance. REP11/AMR Apprendix II

with the concept of prudent use, specifically prohibiting the use of antibiotics belonging to classes of compounds approved for use in human medicine when used solely for growth promotion purposes.

The result of improved understanding of antibiotics resistance issues, behaviours and communication since the JETACAR report have led to the medical and animal agriculture communities having a better understanding of each other's position and a respect not previously experienced. A recent 'debate' in the Medical Journal of Australia, presented a 'yes' and 'no' case for the significance of use of antibiotics in animal agriculture to resistance in human infections[3]. The two positions, one written by a human infectious diseases expert and the other written by a veterinary pharmacologist, when directed to the effectiveness of control exerted in Australian agriculture, were not far apart.

## 2. Actions taken by industry on antibiotic resistance

*Systems and support for prudent use*

Industry has established a number of on-farm assurance programs to minimise risks associated with the management and administration of livestock chemicals and treatments. These programs include the Livestock Production Assurance (LPA) food safety program, covering more than 195,000 farms, and Quality Assurance programs such as the LPA QA (encompassing CATTLECARE and Flockcare). Supported by the National Vendor Declaration, these programs require livestock producers to document all animal treatments, including relevant withholding periods or export slaughter intervals, and pass this information on when selling livestock.

*Monitoring*

Compliance with Maximum Residue Limits (MRLs) for antibiotics indicates responsible use and minimal risk to humans through consumption. Compliance is measured through a number of risk based targeted testing programs including the National Antimicrobial Residue Minimisation (NARM) testing program and the Targeted Antibacterial Residue Testing (TART) program for cattle, and the Sheep Targeted Antibacterial Residue Testing (START) program for sheepmeat.

NARM is a joint initiative between the cattle industry, the Federal Government Department of Agriculture Fisheries and Forestry (DAFF) and the State jurisdictions. The program has three parts: education of producers about antimicrobial residues; sampling and analysis of slaughtered animals;

[3] Does antibiotic use in farmed animals pose a risk to human health? Medical Journal of Australia 196(5)302-303, 19 March 2012

and, MRL compliance. The TART and START programs combine targeted testing, quality assurance, extension and regulation to minimise antibacterial resides. While compliance with MRLs doesn't answer the question of whether antibiotics are always used prudently, it does however indicate that they are used with care in their administration.

The industry has conducted several studies to examine the hygienic quality of meat in Australia, at both the meat processing facility (abattoir)[4,5]and at retail[6]. The prevalence and concentration of bacteria, particularly those of greatest concern with antibiotic resistance, is low in Australian meat. The achievement of these standards minimises the opportunity for antibiotic resistance to spread through the food chain. These data demonstrate that regulatory systems and industry compliance with systems such as Hazard Analysis and Critical Control Point (HAACP) are effective.

DAFF conducted a survey of antimicrobial resistance in bacteria (*E. coli* and *Enterococcus*) isolated from cattle during 2003-4.[7,] The study findings are positive for the Australian animal livestock industries. Although this study shows that antibiotic resistance is present in some indicator and pathogenic bacteria in the guts of food-producing animals in Australia, the National Health and Medical Research Council reviewed the study's findings and found the impact on human health is likely to be small. This survey showed that a low proportion of bacteria, isolated from the three animal species, were resistant to antibiotics. Importantly, this survey found resistance to "critically important" human medicine antibiotics was non-existent or low in bacteria isolated from food-producing animals.[8]

The Department of Health and Aging (DoHA), at the instigation of the Food Regulation Standing Committee, commissioned Food Science Australia to survey the presence of antimicrobial resistant bacteria in beef mince at retail. The report was released in 2009. In the survey, testing of bacteria isolated from foods indicated that overall resistance to the majority of antibiotics was low. When compared to reports from other countries, Australia has a very low prevalence of bacteria that are resistant to antibiotics on these foods, particularly those "critically important" for human medicine.[9]

---

[4] Phillips, D., Bridger, K., Jenson, I. and Sumner, J. (2012) An Australian national survey of the microbiological frozen boneless beef and beef primal cuts. J. Food Protection 75(10)1862-1866

[5] Phillips, D., Tholath, S., Jenson, I and Sumner, J (2013) Microbiological quality of Australian sheep meat in 2011. Food Control 31:291-294

[6] D. Phillips, D. Jordan, S. Morris, I. Jenson and J. Sumner (2008) A national survey of the microbiological quality of retail raw meats in Australia. J. Food Protect. 71(6) 1232-1236.

[7] DAFF (2007). Pilot Surveillance Program for Antimicrobial Resistance in Bacteria of Animal Origin. Australian Government Department of Agriculture, Fisheries and Forestry, Canberra.

[8] Report Report of the Department of Agriculture, Fisheries and Forestry Survey for Antimicrobial Resistance in Bacteria of Animal Origin. Plain Language Summary 15 December 2008

[9] Plain Language Summary. FRSC pilot survey for AMR bacteria in Australian food

*Animal Health Research*

The industry is currently funding research projects to develop molecular diagnostic tools for use in lambs and calves with diarrhoea to establish whether the cause is viral, bacterial or protozoal, so that the correct treatment can be given early.

A project is currently investigating mastitis in sheep and predisposing factors (including genetic predisposition) which could be eliminated to reduce dependence on antimicrobial therapy.

Basic research is commencing on the innate immune system, focussing on ways in which this might be exploited for better disease control and improved production.

*Antibiotic resistance Research*

The industry has funded scientific research aimed at developing scientific capability to investigate antibiotic resistance in the red meat supply chain. This research demonstrated, for the industry, the low level of resistant bacteria in animals and in meat, well before the DAFF and DoHA reports were released. In fact, industry funding developed capability that was utilised to perform the work presented in the DoHA report and provided a valuable insight into how to conduct the study. A contract has been entered into for the conduct of a survey to produce new data on antibiotic resistant bacteria in cattle. This study will be comparable to the earlier studies and also collect data of interest to current concerns. The medical community is being consulted about the details of this survey.

The understanding of the molecular basis for resistance, the ability for resistance to transfer, and prevalence in various animal raising environments has been investigated in extensive industry-funded projects, resulting in a number of scientific publications.[10]

[10] Barlow, R. S., Fegan, N., and Gobius, K. S. 2009. Integron-containing bacteria in faeces of cattle from different production systems at slaughter. Journal of Applied Microbiology 107(2), 540-5.
Barlow, R. S., Fegan, N., and Gobius, K. S. 2008. A comparison of antibiotic resistance integrons in cattle from separate beef meat production systems at slaughter. Journal of Applied Microbiology 104(3), 651-8.
Barlow, R. S., and Gobius K. S. 2006. Diverse class 2 integrons in bacteria from beef cattle sources. Journal of Antimicrobial Chemotherapy 58(6), 1133-8.
Barlow, R. S., Pemberton, J. M., Desmarchelier, P. M., and Gobius, K. S. 2004. Isolation and characterisation of integron-containing bacteria without antibiotic selection. Antimicrobial Agents & Chemotherapy 48(3), 838-842

**Annex:**

**Summary of actions taken by the industry relating to recommendations from JETACAR**

| Number | Recommendation | Action by the industry |
|---|---|---|
| 3 | Stronger audit trail for antibiotics from the importer to the end-user be implemented | Record keeping requirements are embedded within industry's assurance programs including LPA Food Safety, LPA QA (CATTLECARE and Flockcare). |
| 10 | Surveillance of the prevalence of antibiotic-resistant bacteria and resistance genes | Surveys have been conducted by the industry on cattle at the time of slaughter, beef at abattoirs and beef at retail.<br>The industry cooperated with DAFF and DoHA on the design and conduct of surveys they conducted on animals and meat<br>A new survey is being conducted in 2013 |
| 12 | Hazard analysis critical control points (HACCP)-based food safety procedure be implemented | LPA Food Safety, LPA QA (CATTLECARE and Flockcare) program requirements are based on an on-farm HACCP approach<br>Meat processors have adopted HACCP, which is mandated by authorities through the Australian Standard for the production and transportation of meat and meat products for human consumption (AS4696).<br>Microbiological surveys of meat demonstrate the effectiveness of HACCP and control strategies |
| 13 | Cost-effective non-antibiotic methods to increase productivity and prevent disease should be developed | Research underway on vaccines, animal health and diagnostics. Extension information is available to producers on cost-effective animal husbandry that focusses on disease prevention, and simple treatments. |

| | | |
|---|---|---|
| 17 | Continuing education programs on the issue of antibiotic resistance | Advice is given through LPA Food Safety, LPA QA (CATTLECARE and Flockcare), with strict program requirements for use of livestock treatments according to label and veterinary directions |
| 18 | Research into antibiotic resistance | Antibiotic resistance research has been funded by the red meat industry for a significant period and funding has recently recommenced. Several publications on molecular epidemiology have been published. |