

Alliance to Save Our Antibiotics – Written Evidence (AUT0018)

About us: *The Alliance is a coalition of 65 health, medical, environmental and animal-welfare groups campaigning to stop the overuse of antibiotics in animal farming. Our vision is a world in which human and animal health and well-being are protected by food and farming systems that do not rely on routine antibiotic use.*

1. Summary

- 1.1. Any trade deal that is agreed between the UK and Australia must protect British food and farming standards. In particular, the UK should not permit the importation of meat or dairy produced with the routine use of farm antibiotics. This should include a ban on all meat and dairy produced with antibiotic growth promoters. The importation of meat and dairy produced with routine preventative antibiotic use must also be rapidly phased out and so no trade deals should be agreed which increase the importation of such produce.
- 1.2. The overuse of antibiotics in human and animal medicine is undermining their ability to cure life-threatening infections in people. According to the government-commissioned Review on Antimicrobial Resistance, unless significant action is taken, deaths due to antibiotic resistance could increase from the current 700,000 a year worldwide to 10 million a year by 2050 [1].
- 1.3. In the UK and EU, there has been significant progress over recent years to improve antibiotic stewardship in farming. Voluntary action, improved regulation in some countries and the setting of targets have all helped achieve reductions in antibiotic use.
- 1.4. British farmers have reduced their use by about 50% between 2014 and 2018 and throughout Europe use has fallen by about a third between 2011 and 2017 [2][3]. Furthermore, in January 2022 the EU will ban their farmers from using antibiotics routinely and will ban all purely preventative group treatments [4], although the UK government has unfortunately so far refused to commit to implementing this regulation in full [5]. The EU will also be banning the importation of all meat and dairy produced with antibiotic growth promoters in January 2022. In contrast, Australia has not published any information on its farm antibiotic use for any year after 2010, and there was no reduction in Australian farm antibiotic

use between 2005 and 2010.

- 1.5. According to the calculations in this document which are based on official Australian data, in comparison to the UK and many European countries, Australia has very high antibiotic use in its pig and poultry industries, although use in its cattle and sheep appears to be low:
 - Antibiotic use in Australian poultry (299 mg per kg of livestock unit) is over 18 times higher per animal than in the UK (16 mg/kg)
 - Antibiotic use in Australian pigs (293 mg/kg) is over 2.6 times higher per animal than in the UK (110 mg/kg)
 - Antibiotic use in Australian cattle and sheep (5–8 mg/kg) appears to be lower than in the UK (11–21 mg/kg) per animal, although this comparison is very approximate as data on the number of cattle slaughtered in Australia is insufficiently detailed to enable a full comparison to be made. UK cattle data is also based on partial surveys of the industry.

- 1.6. Australia also has weaker regulations on farm antibiotic use than the UK and the EU. The EU and the UK banned the use of all antibiotics for growth promotion in January 2006. In Australia, in December 2017 a voluntary industry ban was introduced on the use of antibiotics considered medically important as growth promoters. However, several antibiotics not currently used in humans are still permitted to be used as growth promoters.

- 1.7. In Australia, as in the United States, when hormone growth promoters are given to cattle, a high-priority critically important antibiotic in human medicine is included with the implant to prevent infection at the implant site. This is an unacceptable use of an antibiotic for productivity purposes and no meat from animals treated in this way should be imported.

- 1.8. Australia continues to use several antibiotics in livestock that have been banned or are no longer licensed for use in UK and EU farm animals. This includes the toxic antibiotic olaquinox, which is banned in the EU in 1999 partly because it is genotoxic and possibly mutagenic. Olaquinox continues to be used as a growth promoter in pigs in Australia.

- 1.9. More positively, Australia has never licensed the use of the high-priority critically important fluoroquinolone antibiotics in farm animals [6]. Fluoroquinolones continue to be licensed in the UK and in many EU countries for use in poultry despite clear scientific

evidence showing that their use in poultry has led to large increases in fluoroquinolone resistance in human *Campylobacter* infections. Australia also does not permit the use of colistin in farm animals. Colistin is a last-resort antibiotic in human medicine which continues to be used in British pigs, albeit at much reduced levels, and in farm animals in many European countries.

2. Use of antibiotic growth promoters in Australia

2.1. The UK and the EU banned the use of antibiotics for growth promotion in their livestock on 1 January 2006. Furthermore, on 28 January 2022 this ban will be extended to animals and animal products imported into the EU. In Australia in contrast there is still no statutory ban on antibiotic growth promoters. However, in December 2017 the livestock, veterinary pharmaceutical and animal feed industries voluntarily agreed to the removal of label claims for growth promotion from antimicrobials of importance to human health [7] .

2.2. However, several non-medically important antibiotics continue to be used for growth promotion in Australia. This includes the toxic antibiotic olaquinox [9], which is banned in the EU in 1999 partly because it is genotoxic and possibly mutagenic [10], which is still used as a growth promoter in pigs in Australia. The antibiotics bambamycin and avilamycin, which are no longer used in farming in the UK or the EU, and the ionophore family of antibiotics are also licensed as growth promoters in Australia.

3. Other forms of routine antibiotic use in Australia

3.1. On 28 January 2022, the EU will ban all forms of routine farm antibiotic use, including purely preventative group treatments. Unfortunately, the British government has so far refused to commit to implementing a full ban on preventative group treatments although it says it will consult on what new restrictions on preventative use it will introduce. Nevertheless, the British poultry industry has ended its use of preventative antibiotic treatments voluntarily and the pig industry has also reduced its use of these treatments.

3.2. In contrast, numerous antibiotics are licensed in Australia for routine disease prevention:

- The antibiotic tylosin, classified by the World Health Organization as a high-priority critically important antibiotic in human medicine, is licensed to be used in conjunction with hormone growth-promoting

implants used in the cattle industry to prevent infections at the implant site [11].

- Numerous antibiotics, including virginiamycin and avilamycin which can no longer be used at all in farming in the UK and the EU, are licensed to prevent various diseases caused by husbandry methods. This includes acidosis caused by high grain diets in cattle or infections caused by transport stress in cattle, necrotic enteritis in chickens (a disease common in intensive systems), beak trimming in chickens, and numerous infections which occur in intensively farmed pigs. There is frequently no limit on how many days or weeks this treatment can be maintained.
- Some antibiotics are licensed for use in Australian farm for disease prevention, with no details given about the diseases the antibiotics are meant to be preventing [12].

3.3. Using antibiotics to prevent diseases caused by poor husbandry and intensive conditions is an irresponsible and unacceptable use of these medicines which can contribute to higher levels of antibiotic resistance in human infections. Routine antibiotic use is often aimed at increasing productivity and lowering costs. The UK should be aiming to end the importation of animal products produced with all forms of routine antibiotic use to protect human health and to ensure that low-cost imports do not undermine British standards.

4. Data on Australian farm antibiotic use

4.1. Australia does not have good, regular surveillance of its farm antibiotic use. Unlike nearly all European countries and the United States, Australia does not publish data on its farm antibiotic use annually. The most recent data on Australian farm antibiotic use is contained in a report published in 2014 by the Australian Pesticides and Veterinary Medicines Authority (APVMA), which only gives information on the sales of veterinary antibiotics between 2005 and 2010 [13].

4.2. According to the APVMA report, 317 tonnes of antibiotics were sold for use in food animals in Australia in 2010. This figure does not include the sales of "cocciostat" antimicrobials which are not generally included in veterinary antibiotic data because they are not considered medically important substances. This compares with UK farm antibiotic use of between 178 and 220 tonnes in 2018 (also excluding cocciostats), according to data published by the Veterinary Medicines Directorate [2].

4.3. However to make a more meaningful comparison we need to take into account the sizes of the different livestock populations in each country. We do this below and calculate comparable data for pigs and poultry.

5. The "Population Correction Unit

5.1. The European Medicines Agency (EMA) has introduced a unit to measure the size of livestock populations, called the "Population Correction Unit" (PCU). This means that comparisons of antibiotic usage can be made between different countries and then adjusted for the size of their livestock populations. The PCU is a technical unit which estimates the average animal weights at time of treatment. It takes into account the number of animals slaughtered and the number of certain living animals, and adjusts for animals imported and exported before slaughter. The EMA takes into account that the majority of antibiotics are used in young animals, so the weight used is likely to be below final weight at slaughter.

5.2. The PCU weights are given below (this image is taken from a Veterinary Medicines Directorate document [14]):

	Slaughter cows	425 kg
	Slaughter heifers	200 kg
	Slaughter bullocks and bulls	425 kg
	Slaughter calves & young cattle	140 kg
	Imported/exported cattle for slaughter	425 kg
	Imported/exported for fattening	140 kg
	Livestock dairy cows	425 kg
	Slaughter pigs	65 kg
	Imported/exported pigs for slaughter	65 kg
	Imported/exported pigs for fattening	25 kg
	Livestock sows	240 kg
	Slaughter broilers	1 kg
	Slaughter turkeys	6.5 kg
	Imported/exported poultry for slaughter	1 kg
	Slaughter sheep & goats	20 kg
	Imported/exported sheep & goats for slaughter	20 kg
	Livestock sheep	75 kg
	Living horses	400 kg
	Slaughtered fish based on liveweight	-- kg
	Slaughter rabbits	1.4 kg

5.3. The PCU weight of imported animals get subtracted from the PCU total, and PCU weights of exported animals get added.

6. Australian antibiotic use in pigs

6.1. The Australian Bureau of Statistics (ABS) provides data on the number of animals of each species that are slaughtered each year [15]. For pigs, ABS data shows that 4,617,000 were slaughtered in 2010. In addition, data from the Australian Pig Annual [16] shows that there were 231,675 sows in Australia in 2010. Data from the Food and Agriculture Organisation [17] shows that in 2010 Australia exported 249 live pigs and imported none.

6.2. From this we can calculate the total PCU for Australian pigs:
Pig PCU= $(4,617,000 \times 65) + (231,675 \times 240) + (249 \times 65)$ kg
= 355,723,155 kg = 356 thousand tonnes.
According to the APVMA report, 104.2 tonnes of active ingredient of antibiotics were used in pigs in 2010. This means that use in Australian pigs was:
Australian antibiotic use in pigs = $104.2 / 355.7$ g/kg = 293 mg/kg

6.3. Use in pigs in the UK in 2018 was 110 mg/kg. So Australian use is 2.7 times higher than in the UK.

6.4. Table 1 also shows that Australian antibiotic use in pigs is higher than in the United States and far higher than in countries like Denmark, the Netherlands and France which currently provide the majority of the UK's pig-meat imports.

Table 1 International comparisons of antibiotic use in pigs in mg per kg of "Population Correction Unit" for countries where data is available [18]

China (2012)	593
Australia (2010)	293
Vietnam (2015)	270-400
US (2018)	258
Ireland (2016)	162
UK (2018)	110
Austria (2018)	96

France (2018)	94
Denmark (2018)	43
Netherlands (2019)	40
Sweden (2019)	12
Denmark organic (2014)	4-5

7. Australian antibiotic use in poultry

7.1. According to ABS data, 512,169,600 chickens were slaughtered in Australia in 2010 and FAO data shows that 698,000 live chickens were exported with none being imported. According to a report prepared for the Department of Agriculture, Fisheries and Forestry, in 2009 there were approximately 5.2 million turkeys slaughtered.

7.2. From this information we can estimate Australian poultry PCU in 2010:

Poultry PCU = $512,169,600 + 698,000 + (5,200,000 * 6.5)$ kg = 547 thousand tonnes

According to the APVMA report, 163.1 tonnes of active ingredient of antibiotics were used in poultry in 2010. This means that use in Australian poultry was:

Australian antibiotic use in poultry = $163.1 / 547$ g/kg = 299 mg/kg

7.3. Use in poultry in the UK in 2018 was 16 mg/kg. So Australian antibiotic use in poultry is over 18 times higher.

8. Australian antibiotic use in cattle and sheep

8.1. According to the APVMA report, 49.7 tonnes of antibiotics were used in Australian cattle and sheep in 2010 (excluding coccidiostats). This is not broken down between cattle and sheep. Furthermore Australian cattle slaughter data is insufficiently detailed to enable an accurate calculation of the total PCU.

8.2. Nevertheless, based on an approximate calculation of the PCU, we can deduce that use in Australian cattle and sheep averages somewhere between 5 mg/kg and 8 mg/kg. This level is a low level as use in sheep in the UK is estimated to be about 11

mg/kg and use in cattle around 17-20 mg/kg. In comparison in US cattle is 161 mg/kg.

21 September 2020

References

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- [17] <http://www.fao.org/faostat/en/#data/TA>
- [18] All data is from national reports, or based on data from national reports, or else from large-scale surveys.