

RESPONSIBLE AMU STRATEGY



INITIATED IN 2011, Chicken Farmers of Canada's (CFC) RESPONSIBLE ANTIMICROBIAL USE (AMU) STRATEGY HAS LED THE WAY IN UNDERSTANDING ANTIMICROBIAL USE PATTERNS, PROMOTING GOOD PRODUCTION PRACTICES, GUIDING RESEARCH, AND REDUCING ANTIMICROBIAL USE.

With chicken being the number one protein consumed by Canadians, CFC's *Responsible AMU Strategy* plays a major role in producing food that Canadians can trust. CFC's Strategy delivers a sustainable means of:

- » meeting consumer and government expectations for using antimicrobials in a responsible manner,
- » protecting the health and welfare of birds, and
- » preserving effective treatment options.

CFC RESPONSIBLE AMU STRATEGY

CFC's *Responsible AMU Strategy* is a sector-wide approach built on the foundations of reduction, surveillance, stewardship, research and innovation.







CFC's strategy focusses on the preventive use of Category I, II and III antimicrobials which are important in human medicine, as defined by Health Canada. As a result, this strategy continues to allow:

- » The use of antimicrobials for treatment of clinical or subclinical infectious diseases
- » The preventive use of ionophores (Category IV antimicrobials)
- » The use of chemical coccidiostats

CFC's strategy is not a "Raised Without the use of Antimicrobials" (RWA) strategy. An RWA strategy for the entire sector is neither sustainable nor ethical, as these are important tools for farmers and veterinarians to uphold their duty to protect bird health and welfare. Antimicrobial use in agriculture will continue to play an important role in ensuring animal health and welfare.

RESPONSIBLE AMU IN THE CANADIAN CHICKEN SECTOR



	Eliminated the preventive use of Category I antimicrobials (2014) - Cephalosporins - Fluoroquinolones
	Eliminated the preventive use of Category II antimicrobials (2018) - Steptogramins - Macrolides - Penicillins
	No over the counter sales of antimicrobials of human importance
	All antimicrobials used are approved by Health Canada
	All antimicrobials of human importance are used with a veterinary prescription
	Reductions in antimicrobial resistance in targeted bacteria achieved



STEPWISE APPROACH TO REDUCTION

CFC's strategy has been developed to provide a sustainable means of meeting consumer expectations while protecting the health and welfare of birds. The reduction steps of the strategy are:

STEP 1

ELIMINATION OF THE PREVENTIVE USE OF CATEGORY I ANTIMICROBIALS IN MAY 2014

STEP 2

ELIMINATION OF THE PREVENTIVE USE OF CATEGORY II ANTIMICROBIALS AT THE END OF 2018

STEP 3

REDUCTION OF ANTIMICROBIAL USE, WITH A FOCUS ON THE PREVENTIVE USE OF CATEGORY III ANTIMICROBIALS

COLLABORATION WITH GOVERNMENT

The regulatory and policy initiatives of CFC and government initiatives can provide confidence to consumers about the use and oversight of antimicrobials in Canada.

CFC's *Responsible AMU strategy* works in collaboration with the federal government's Pan-Canadian Framework on Antimicrobial Resistance and Antimicrobial Use. CFC

has actively collaborated with the Public Health Agency of Canada (PHAC) on surveillance initiatives and with Health Canada to strengthen regulatory oversight of antimicrobial use and reporting.

Health Canada's initiatives to strengthen antimicrobial oversight include:

- » Requiring veterinary oversight of medically important antimicrobials
- » Removing growth promotion claims for antimicrobials
- » Eliminating of over-the-counter sales of medically important antimicrobials
- » Requiring annual sales reporting by pharmaceutical companies

MOVING FORWARD

Building on the elimination of the preventive use of Category I and II, CFC is now focusing on a non-regulatory approach to further reducing antimicrobial use, with specific attention on reducing the preventive use of Category III antimicrobials.

CFC will be working with government and key supply chain stakeholders to promote reduction strategies, increase access to animal health products and share lessons-learned on reduction experiences.

To help provide solutions for these dynamic changes, the sector continues to sponsor research into innovative alternatives to antimicrobials such as probiotics, prebiotics, vaccinations, and management practices throughout the supply chain. Integral to increasing product availability, CFC supports regulatory modernization to provide similar access and labelling opportunities for alternative products as our international counterparts.





CFC'S RESPONSIBLE AMU STRATEGY HAS RESULTED IN REDUCED ANTIMICROBIAL USE AND ANTIMICROBIAL RESISTANCE

CFC collaborates with the Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS) of PHAC as it performs antimicrobial use (AMU) surveillance at the farm and antimicrobial resistance (AMR) surveillance at the farm, processing and retail.

CIPARS has been performing AMR surveillance at processing since 2002 and on-farm AMU surveillance since 2013 in 6 provinces (BC, AB, SK, ON, Qc, NS) on approximately 145 farms annually.

ANTIMICROBIAL USE

CIPARS has demonstrated reductions in antimicrobial use and has pointed to CFC's Responsible AMU Strategy as a major factor for this reduction.

CIPARS¹ INDICATES:

≥60% of the quantity of antimicrobials used are non-medically important antimicrobials (i.e. Category IV and chemical coccidiostats)

≥40% of flocks are being grown *without* medically important Category I, II or III antimicrobials

All antimicrobial use indicators tracked by CIPARS decreased in 2021 compared to 2019:

20% decrease in mg/PCU

19% decrease in mg/kg animal biomass

18% decrease in DDDvetCA/1,000 broiler chicken days

10% decrease in the percentage of flocks exposed to medically important antimicrobials

CHANGES IN ANTIMICROBIAL USE FROM 2013 TO 2021 (AS A % OF SURVEYED FLOCKS)¹

Category I	100% reduction	
Category II	92% reduction	
Exposure to medically important antimicrobials	28% reduction	
RWA (raised without the use of antimicrobials)	>300% increase	

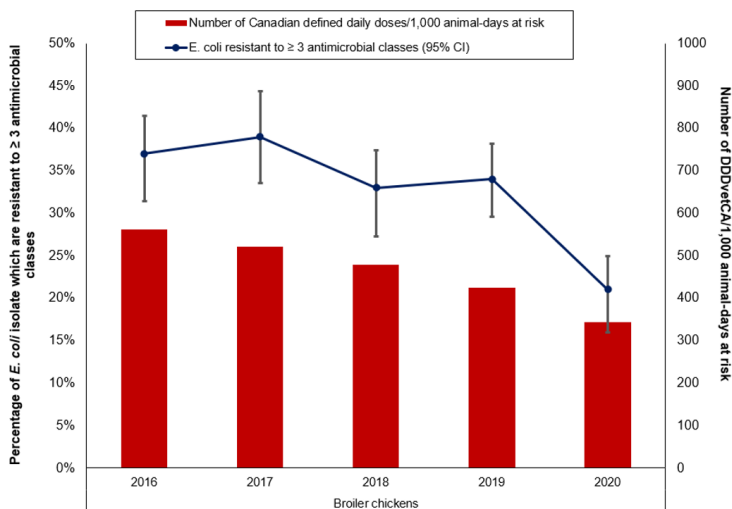
These significant reductions have been sustained since the inception of CIPARS on-farm surveillance, during a time when annual production increased by 26%.

ANTIMICROBIAL RESISTANCE

CIPARS has demonstrated reductions in antimicrobial resistance in targeted bacteria and has pointed to CFC's *Responsible AMU Strategy* as a major factor for this reduction².

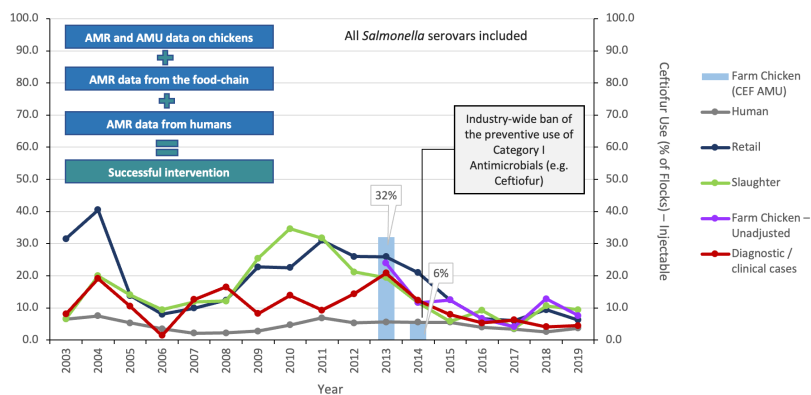
- » A reduction in AMR was observed across most antimicrobials and classes during 2013–2019.
- » AMR in broiler chickens declined by between 6% and 38% after the decrease in preventive antimicrobial use.
- » An overall reduction in resistance levels in indicator and zoonotic foodborne bacteria of broiler chicken origin was successfully achieved.

FIGURE 1: Antimicrobial use and antimicrobial resistance from chicken farms, 2016-2019



Source: Public Health Agency of Canada (2022)

FIGURE 2: Temporal variation in frequency of ceftriaxone resistance (%) among all salmonella serovars and ceftiofur use (% of flocks) by host species (chicken and human) and cipars surveillance component, 2003-2019



Source: Public Health Agency of Canada (2022)

INTEGRATED AMU AND AMR RESULTS

PHAC has also published surveillance results³ highlighting the positive impacts of CFC's *Responsible Use Strategy*.

PHAC data (seen in Figure 1) indicates that *E. coli* AMR trends have decreased 16% from 2016 to 2020, including a 13% annual decrease between 2019 and 2020. These reductions coincided with reduced AMU indicators which occurred at the same time as changes in veterinary drug legislation on antimicrobial use stewardship and CFC's elimination of the preventive use of Category II antimicrobials.

CFC's policy of eliminating the preventive use of Category I antimicrobials has also been acclaimed as resulting in a significant decrease in AMU (to zero Ceftiofur use as reported by CIPARS since 2015) and a reduction in *Salmonella* resistant to third-generation cephalosporins from retail chicken and human isolates (seen in Figure 2).





FREQUENTLY ASKED QUESTIONS

WHAT DO CATEGORY I, II, III AND IV ANTIMICROBIALS MEAN?

Antimicrobials are ranked by Health Canada based on their importance to human medicine, ranging from Categories I to Category IV. The higher the Category, the more important it is in human medicine and fewer alternatives are available, so preserving its effectiveness (minimizing bacterial resistance to that class of drugs) is of greater importance. CFC's strategy is to tackle those antimicrobials of greatest importance to human medicine. Category IV antimicrobials are categorized as low importance and not used in human medicine.

WHY DOES CFC'S STRATEGY NOT INCLUDE REDUCING CATEGORY IV ANTIMICROBIALS?

Category IV antimicrobials (i.e. ionophores) are not used in human medicine. In Europe, these products are not even classified as antimicrobials but rather as feed additives. Ionophores are antiparasitics that are used to control coccidiosis and maintain intestinal integrity – two key elements in maintaining animal welfare and reducing the need for higher level antimicrobials to treat diseases. The World Health Organization, the World Animal Health Organization and the European Surveillance Programme of Veterinary Antibiotics have confirmed that ionophores have no known impact on human health.

WHY ARE ANTIMICROBIALS USED IN FOOD PRODUCTION?

Antimicrobials play an important role in maintaining animal health and welfare, as well as providing a safe food product for consumers.

Antimicrobials are used to treat and prevent illness and disease and to ensure animal welfare. Antimicrobials used in Canadian chicken production are approved for use by the Veterinary Drugs Directorate of Health Canada, and all medically important antimicrobials require a veterinary prescription.

WHY DO ANTIMICROBIAL USE LEVELS FLUCTUATE OVER TIME?

Due to their importance for animal health and welfare, it is expected that the usage of antimicrobials will fluctuate based on the health status and disease challenges encountered from year to year. These challenges will have an impact on use patterns over time.

ARE THERE ANTIBIOTICS IN THE FOOD WE EAT?

No – Consumers should be confident that chicken is free of antibiotic residues. That's because a certain amount of time must pass from when an animal is last treated with antibiotics until it is processed. This is known as a withdrawal period, and it ensures that the antimicrobial has been metabolized by the body and that no residues remain in the meat. Antimicrobial residues are strictly monitored by the Canadian Food Inspection Agency.

REFERENCES

- 1 Public Health Agency of Canada (PHAC) (2021). Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS) Poultry Industry Report – Preliminary Report Broiler Chickens.
- 2 Huber, L.; Agunos, A.; Gow, S.; Carson, C.; Van Boeckel, T. (2021). Reduction in Antimicrobial Use and Resistance to Salmonella, Campylobacter, and Escherichia coli in Broiler Chickens, Canada, 2013–2019. Emerging Infectious Diseases. Vol. 27, No. 9, September 2021.
- 3 Public Health Agency of Canada (PHAC) (2022). Canadian Antimicrobial Resistance Surveillance System (CARSS) Report.