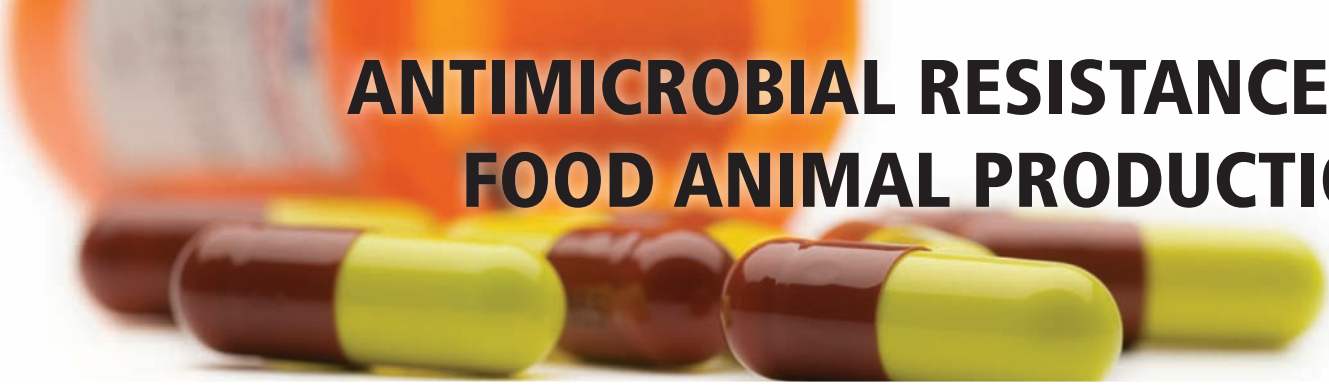

ANTIMICROBIAL RESISTANCE IN FOOD ANIMAL PRODUCTION

Antibiotics are used in food animals (agriculture) for the treatment of animals with clinical bacterial infections, and for disease prophylaxis and growth promotion. Most of the classes of antibiotics used in humans are also used in animals, including some of those considered by the World Health Organization to be critically important for humans. Although often beneficial for humane and efficient food animal production, antibiotic use in animals selects for antibiotic resistance in a wide range of bacteria to which humans may be exposed. For example, food animals are important reservoirs of several foodborne bacteria that cause infections in humans, including *Salmonella*, *Campylobacter*, and *E. coli*. Other means of exposure include environmental contamination (including water) and direct contact with animals. Antibiotic resistance linked to antibiotic use in animals can increase the frequency, severity, and duration of illness in humans.

Quick Facts

- Antibiotics important to human health are used in animals for disease therapy, prophylaxis, and growth promotion.
- Some antibiotics used in animals have no use in humans.
- Antibiotics for use in animals are licensed by Health Canada, but veterinarians can prescribe these drugs for species and situations beyond the licensed use (extra-label use).
- A veterinary prescription is not always needed for antibiotic use in animals in Canada (animal owners can purchase antibiotics without a prescription), except Quebec, where a prescription is always needed.
- The overall quantity of antibiotics used in animals in some countries is greater than or equal to use in humans, in others less, depending on animal and human population sizes and other factors.
- In Canada, there is no mechanism for tracking quantities of antibiotics used in animals.
- Antibiotic-resistant *Salmonella*, *Campylobacter*, *E. coli*, and other bacteria can be transferred from animals to humans, usually through food contaminated during production, slaughter or processing.

What can be done?

Some antibiotic use is necessary for humane and efficient food animal production. There is, however, a need to reduce drug use in animals to reduce antibiotic resistance selection.

- The food animal industries should phase out use of antibiotic growth promoters and substantially decrease prophylactic antibiotic use, while remaining economically viable and protecting animal welfare.
- Antibiotics deemed critically important to human health (e.g. 3rd generation cephalosporins) should not be used for disease prophylaxis, but should be reserved for specific indications and conditions approved by Health Canada. Their administration to entire groups of animals should be avoided.
- Extra-label use of antibiotics in food animals should also be avoided, especially when administered to groups of animals.
- Food producers and farmers should regularly consult with their veterinarian concerning antibiotic use and veterinarians should follow prudent antimicrobial use guidelines.

Additional Resources

World Health Organization – foodborne diseases / antibiotic resistance
www.who.int/foodborne_disease/resistance/en/

Recommendations to Health Canada to improve antibiotic use in animals
www.hc-sc.gc.ca/dhp-mps/pubs/vet/amr-ram_final_report-rapport_06-27_cp-pc-eng.php

Canadian Integrated Program for Antimicrobial Resistance Surveillance
www.phac-aspc.gc.ca/cipars-picra/

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