

## Vol. 34 No. 319

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### Pharmacy Spotlight: Ceftiofur

#### What is Ceftiofur?

Ceftiofur is an antibiotic of the cephalosporin class. It is a third generation cephalosporin, which means it is a newer member of the class. Ceftiofur was first synthesized in 1987, and has since become a widely-used antimicrobial in veterinary medicine. It is also considered a Category I Antimicrobial – *Very Important for Human Medicine* - by Health Canada. This means Ceftiofur must be used carefully to help avoid antimicrobial resistance (AMR). Regulations on the use of Category I Antimicrobials in animals are already present in some parts of Canada, and should be expected in Ontario in the future.

#### What Does Ceftiofur do?

Ceftiofur is a BROAD-SPECTRUM antibiotic. It can be used to treat infections caused by a wide variety of bacterial species. These include infections caused by Gram positive bacteria like staphylococcus and streptococcus species, and by Gram negative bacteria such as e. Coli. This broad spectrum of action makes Ceftiofur a very versatile and effective antibiotic when used appropriately.

#### What Products contain Ceftiofur?

There are several products contain Ceftiofur, some of which you are likely familiar with:

##### INJECTABLE PRODUCTS:

**Excenel '4G':** For Cattle and Horses

Advantages: Non-irritating formula

Disadvantages: Needs to be reconstituted, must be kept in fridge, limited shelf-life once mixed

**Excenel RTU EZ :** For Cattle

Advantages: Shelf- stable, no mixing required

Disadvantages: Viscous formula can be hard to inject

**Excede 200:** For Cattle and Horses

Advantages: Single dose provides extended period of antimicrobial activity; 6.5 days in cattle, 4 days in horses

Disadvantages: Excede **MUST** be administered under the skin at the base of the ear in cattle, longer meat-withholding time compared to other injectable forms

##### INTRAMAMMARY PRODUCTS :

**Spectramast LC / DC**

Intramammary antibiotics for Dairy Cattle:

**Spectramast DC- 500mg/tube:**

- For the treatment of subclinical mastitis associated with *S. aureus*, *S. dysgalactiae*, and *S. uberis* at time of dry-off

**Spectramast LC- 125mg /tube:**

- For the treatment of clinical mastitis caused by *E. Coli*, *S. Dysgalactiae*, or staphylococci (non-aureus)
- For the treatment of diagnosed subclinical mastitis associated with staphylococci (non-aureus) and *S. Dysgalactiae*
- FROM THE LABEL:

**Note:** To limit the development of antimicrobial resistance, treatment of subclinical mastitis with **SPECTRAMAST LC** should be initiated under veterinary oversight and only after a diagnosis has been supported by a positive culture or other pathogen-specific diagnostic test.

### Ceftiofur and Antimicrobial Resistance (AMR):

*"Antimicrobial resistance is a global public health concern. The loss of effective antimicrobials is reducing our ability to protect Canadians from infectious diseases, with profound impacts on our healthcare system, global trade, agriculture, environment and health sector"*

FROM HEALTH CANADA: *Antimicrobial Use and Resistance in Canada: A Federal Framework for Action – 2014*

#### **What is antimicrobial resistance and how does it develop?**

Antimicrobial resistance simply means that the antimicrobial drugs that used to be effective against a particular microbe no longer work because the microbe's biological makeup has changed; it has become resistant to the treatment. The problem can occur naturally, or when an infection is treated with an antimicrobial which kills only some of the microbes. Those that can resist the treatment survive and multiply. Over time, more and more of the resistant microbes remain in our environment, eventually leading to the emergence of **new strains of disease-causing microbes that are partially or fully resistant to antimicrobial treatment.**

#### **Why is antimicrobial resistance a problem?**

Modern medical and veterinary practice depends on the widespread availability of effective antimicrobials to prevent and treat infections in humans and animals. Without them, the ability to fight infectious disease is significantly impeded. Each year in Canada, more than 18,000 hospitalized patients acquire infections that are resistant to antimicrobials.

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### Current Regulations– QUEBEC

#### **April 2020 – Amendment to the Animal Health Protection Act (Chapter 42, Section 55.9)**

**1.1.** The administering, for curative purposes, of a medication belonging to one of the classes of antimicrobials of the "Category I: Very High Importance" to an animal intended or whose products are intended for human consumption is reserved exclusively to the cases in which it appears, for instance after carrying out an antibiogram, that the administering of a medication of a class other than the classes of that category will not allow treatment of the disease.

**1.2.** The administering, for preventive purposes, of a medication belonging to one of the classes of antimicrobials of the "Category I: Very High Importance" to an animal intended or whose products are intended for human consumption is prohibited.

**Translation:** In Quebec, Ceftiofur (or any other Category I antimicrobial) may only be used in a sick food animal if it can be PROVEN that it will be effective, which requires Bacterial Culture and Susceptibility testing AND Using a Category I antimicrobial for prevention of infection is prohibited except in special circumstances. This is the reality in Quebec today, and could easily be our reality in Ontario before long.

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#### **Take-Home Message:**

Ceftiofur is an effective, medically-important antimicrobial. Use Ceftiofur judiciously and seek guidance if you have doubts about its appropriateness in a given case. Heartland Vet Services is committed to providing our clients with current information and helpful advice about antimicrobial use in their animals, and to promoting good antimicrobial stewardship for the future of our industry.

*Tom Gutteridge, DVM*



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## Holiday Office Hours

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Our staff has been dedicated to continuing to provide service and care to our clients and their pets/animals. In an effort to show our appreciation and to give our staff a much-deserved break and opportunity to recharge we will be closing our offices on the Saturday of the next 3 public holiday weekends. The Saturday's that will be affected will be the Civic Holiday (Saturday August 1), Labour Day (Saturday September 5), and Thanksgiving (Saturday October 10). As always, we will continue to provide 24-hour emergency services for our clients. In the event of an emergency please contact us at 1-800-565-2047. On behalf of the partners and staff at Heartland Animal Hospital & Veterinary Services, we would like to thank you for your business and continued support.

## Veterinary Services During the COVID-19 Pandemic

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Much has changed with the alarming presence of the COVID-19 virus in Ontario. During this time, it is important that we maintain a safe food supply. Our veterinarians will continue to play a role in animal health, welfare, and food safety. At the time of this writing, we are still providing herd health and emergency service. In response to the pandemic, our clinic is taking many precautions to ensure everyone's safety. We care very much about the health and wellbeing of our clients, staff, families and community. Below are some of the changes we have implemented. Please be aware that as this pandemic develops, we may have to adjust our procedures in response.

### Veterinary farm visits

- Vets will be contacting farmers before our arrival to the farm to assess the level of risk, the comfort of both parties and to clarify our expectations for social distancing
- Once on farm, we will be wearing gloves during the visit and try to maintain a distance from people of at least six feet wherever practically possible
- Care will be taken to wash and disinfect hands and contacted tools and equipment before re-entering our vehicle

### Technician farm visits

- Techs will continue to assist veterinarians as necessary. The same precautions as above will apply
- Technicians will continue to provide services, such as dehorning, but we ask that no farm personnel are in the immediate vicinity during their visit

### Clinic procedures

- Our clinic will remain open, but business hours may be subject to change
- Clients will be met at the door by one of our customer care representatives
- Purchases will be set out at the door
- Laboratory samples will be received at the door

We thank you for assistance in helping us continue to provide veterinary care while considering the health of yourselves and our staff.

Stay healthy!

