



Antimicrobial Stewardship: Introduction to the CMIB.



Outline

- What is the Compendium of Medicating Ingredients Brochures (CMIB)?
- What is the purpose of CMIB?
- Which changes have been made to the structure of the CMIB?
- An example of how to use the document to prescribe a medicated feed

What is the CMIB?

A regulatory document featuring a collection of **Medicated Ingredient Brochures (MIB)** which provide information for all Health Canada approved in-feed medications.

Each active ingredient has its own MIB based on approved product labels and includes:

- Approved claims for each medication
- Drug levels (dosages) for each claim
- Information required to appear on the medicated feed label
- Any restrictions for the use of the medication, such as the withdrawal time

Purpose of the CMIB

- Feeds manufactured with medicated ingredients that are Over-the-Counter (OTC) and pursuant to the CMIB will not require a veterinary prescription prior to manufacture or sale (except in Quebec)
- Feeds manufactured with a Prescription medicated ingredient according to the CMIB can be mixed prior to the receipt of a veterinary prescription i.e., "floor stocked" and made available for sale with a valid veterinary prescription
- Feeds manufactured with a medicated ingredient that does not follow the CMIB (i.e., off-label) will require a veterinary prescription prior to manufacture.

Purpose of the CMIB

The CMIB is a reference document for use by all stakeholders which describes which medications have been approved to be mixed into feeds, under what circumstances and how they are to be mixed to facilitate the manufacture of feeds prior to receiving a veterinary prescription (i.e., floor-stocked).

Section 14 part (b) of the Feeds Regulations states:

A feed shall not contain medicating ingredients of a brand, at a level or for a purpose or species other than as set out in the Compendium of Medicating Ingredients Brochures unless the feed is a veterinary prescription feed.

Changes to the CMIB-2018

The introduction of new regulations to combat antimicrobial resistance have triggered a number of changes to the CMIB

Prior to 2018

Growth promotion claims present

2018 and Beyond

Growth promotion claims removed, including removal of products with solely GP claims

Only OTC medications



Both OTC and Prescription products

No DIN numbers listed



DIN numbers listed for all products

MIBs listed by number code, ex. tylosin was #80



MIBs listed by letter code, ex. tylosin is now TYL (based on active)

How the CMIB is structured?

The CMIB contains an introductory chapter and MIBs that are searchable in the following ways:

- By active ingredient
- By brand name
- By livestock species
- By sponsor/manufacturer

Note: The CMIB is a living document that is updated regularly. It is your responsibility to ensure you are referencing the most upto-date MIB.

How each MIB is structured

Each MIB within the compendium is organized into three sections:

- 1. Introductory profile
- 2. Claim (indication) with directions for use and restrictions
- 3. Accepted compatibilities

1. The introductory profile

- Prescription status (i.e., Prescription or OTC)
- Active ingredient
- Species of livestock for which the MIB is approved
- Table of approved claims for which the medication may be used
- Approved brands (of DIN premixes that contain the medicating ingredient)
- Approved form of feed (granular, meal or pellet) where applicable

2. Claim (Indication)

- Level of medication in the finished feed
 - Expressed as a mg of active per kg of complete feed (%)
 - May also be specified as kg/head/day, per kg of body weight
- Directions for feeding length of time to feed the medicated feed
- Any additional directions to the feed manufacturer and/or the end-user
- Warnings (human safety) and Cautions (animal safety)
 - Warnings and cautions must appear on the label for the finished feed, except where noted in the individual MIB.

3. Accepted compatibilities

- Compatibilities are medications that have been approved for use concurrently in feed, based on safety and a lack of drug interference
- Accepted compatibilities are species and claim-specific
- Approved compatibilities are listed in a table at the end of the MIB section for that species
- Directions for use and restrictions for each compatible medication must be followed
- When combining multiple medications the longest withdrawal time must be followed and must appear on the label for the finished feed (only one withdrawal time should be listed on the feed label)

How to use the CMIB

- The following is a demonstration using the CMIB for:
 - Prescribing a CMIB-compliant medicated feed
 - Prescribing an extra-label medicated feed

Our scenario

A veterinarian wishes to issue a prescription for a "Beef Supplement" medicated with chlortetracycline hydrochloride (listed as CTC in the CMIB) as an aid in the prevention of foot rot as indicated in the CMIB.

Note that CTC is a medically important antimicrobial.

The veterinarian's client - a local beef producer - currently purchases a <u>non-medicated</u> beef premix at a local feed manufacturing facility and mixes it at 25 kg per tonne of complete feed in his on-farm mixer.

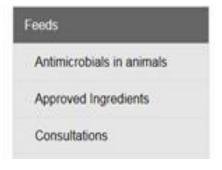
The prescription will allow his client to purchase this same supplement but with the addition of the medically important antimicrobial CTC, which as of December 1, 2018 requires a veterinary prescription to be issued before the medicated feed can be purchased. CMIB
Where do I find it?

CFIA website (www.inspection.gc.ca) Under "Animals" click on "Feeds"



CMIB Click on "CMIB Table of Contents"





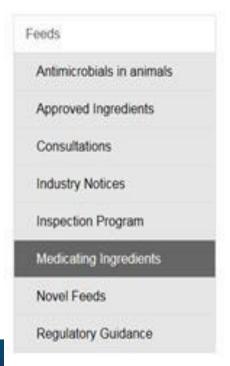
Livestock Feeds





Which index to use?





Compendium of Medicating Ingredient Brochures

The Compendium of Medicating Ingredient Brochures (CMIB) is the document that lists those medicating ingredients permitted by Canadian regulation to be added to livestock feed. This includes drug products that may only be used under a veterinarian prescription as well as products that may be used in the manufacture of livestock feed without veterinarian approval (over the counter products). This document specifies the species of livestock, the level of medication, the directions for feeding and the purpose for which each medicating ingredient may legally be used, as well as the brand of each medicating ingredient that is approved for use in Canada. In addition, it sets out the labelling requirements to ensure compliance to prescribed labelling standards (e.g. medication level, approved claim, directions for use, warnings and cautions). All medicated feed manufactured, used, or sold in Canada must be prepared in such a way as to adhere to the specifications of the Compendium of Medicating Ingredient Brochures, in order to comply with Section 14 of the Feeds Regulations.

- Backgrounder
- Index of medicating ingredient brochures by name
- Index of medicating ingredients by brand name
- Index of medicating ingredients approved by livestock species
- Index of medicating ingredients by name of sponsor/manufacturer



Four Indexes Which one do I use?

We can find "Chlortetracycline hydrochloride" (CTC) using any of the four indexes.

To find CTC using: Index of medicating ingredients brochures by name

Index of medicating ingredient brochures by name

1 This page is part of the Guidance Document Repository (GDR).

Looking for related documents? Search for related documents in the Guidance Document Repository

Date of revision: July 2018

Medicating ingredient brochures by name

MIB	Name of medicating ingredient	Status	Name of approved brand(a)	Date of revision
AMP	Amprollum	Over the counter	Amprol Feed Premix	2017-10
AVI	Avilamycin	Veterinary prescription	Surmax 100 Premix Surmax 200 Premix	2018-04
BACN-M	Bacttracin (as bacttracin methylenedisalicylate)	Veterinary prescription	1. BMD 110 G 2. Bacitracin MD	2018-04
BACN-Z	Bacitracin (as zinc bacitracin)	Veterinary prescription	Albac 110 Zinc Bacitracin Premix Zinc Bacitracin 110	2018-04
ВАМ	Bambermycins	Over the counter	Flavomycin 4 Antibiotic Premix	2006-09
CLO	Clopidol	Over the counter	Coyden 25 Anticoccidial Premix	2017-07
CSP	Chlortetracycline hydrochloride, Sulfamethazine and Penicillin	Veterinary prescription	Aureo S-P 250 G Granular Medicated Premix Aureombt 625 G Granular Medicated Premix Chior 250 Medicated Premix Super Chior 250 Medicated Premix Super Chior 250 Drug Premix	2018-04
стс	Chlorletracycline hydrochloride	Veterinary prescription	Aureomycin 220 G Granular Medicated Premix Chior 50 Medicated Feed Premix Chior 100 Granular Medicated Premix Deracin 22% Granular Premix	2018-04

Index contains:

- link by MIB code "CTC"
- Name of medicating ingredient Chlortetracycline hydrochloride
- Status Veterinary prescription
- Approved brand(s) 4
 available
- Date of revision of MIB
 - -2018-04

Index of medicating ingredient brochures by name

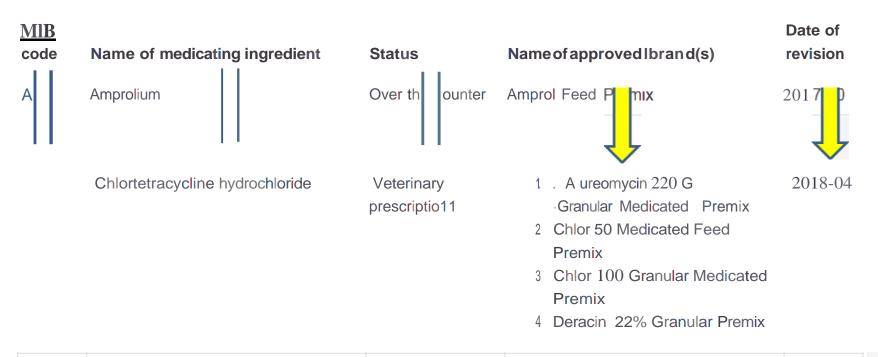
O This page is part of the Guidance Document Repository (GDR).

Looking for related docu ments?

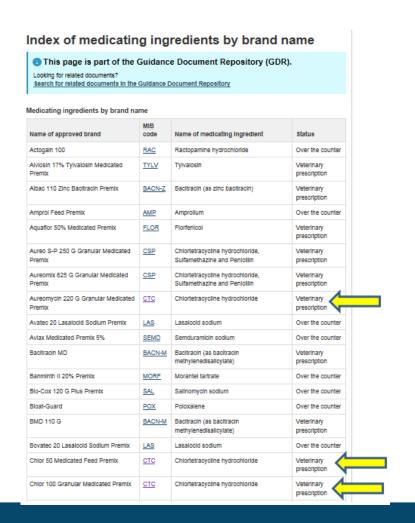
Search for related documents in the Guidance Document ReP-osito[Y-

Date of revision: November 2018

Medicating ingredient brochures by name



To find CTC using: Index of medicating ingredients by brand name



Click on "Index of medicating ingredients by brand name"

Index contains:

- Name of approved brand (listed alphabetically)
 e.g., "Chlor 100 Granular Medicated Premix"
- MIB code and link to CMIB
 "CTC"
- Name of medicating ingredient
 Chlortetracycline hydrochloride
- Status Veterinary prescription

Index of medicating ingredients by brand name

O This page is part of the Guidance Document Repository (GDR).

Looking for related documents?

Search for related documents in the Guidance Document RePrositolY-

Date Revised October 2018

Medicating ingredients by brand name

	Name of approved brand	. <u>M.IB</u> code	Name of medicating ingredient	Status
	Actogain 100	RAC	Ractopamine hydrochloride	Over the counter
	Aureomycin 220 G Granular Medicated		Chlortetracycline hydrochloride	Veterinary
	Bovatec 20 Lasalocid Sodium Premix		Lasalocid sodium	Over the counter
[chlorso Medicated Feed Premix	СТС	Chlortetracycline hydrochloride	Veterinary prescription
	Chlor 100 Granular Medicated Premix	CTC	Chlortetracycline hydrochloride	Veterinary prescription

To find CTC using: Index of medicating ingredients approved by livestock species



Index of medical and in the distribution by livestock species

O This page is part of the Guidance Document Repository (GDR).

Looking for related documents?

Search for related documents in the Guidance Document ReP-osito(Y-

<u>Chickens</u> <u>Cattle</u> <u>Fish</u>

<u>Turkeys</u> <u>SheeR</u> Rabbits

<u>Swine</u> <u>H orses</u>

Date of revi sion: Octobe r 2018

edicating Ingredients approved for Cattle

Species (class)	Name of medicating ingred ient	MIB code	Name of approved brand(s)	Status
Cattle	Decoquinate		Deccox 6% Premix	Over the counter
Beef	Chlortetracycline hydrochloride		 A ureomycin 220 G Granular Medicated Premix Chlor 50 Medicated Feed Premix Chlor 100 Granular Medicated Premix Deracin 22% Granular Premix 	Ve terinary prescription

To find CTC using:

Index of medicating ingredients by name of sponsor/manufacturer

Index of medicating ingredients by name of sponsor/manufacturer

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Date of revision: May 2018

Bio Agri Mix LP 11 Ellens Street Mitchell ON NOK 1NO

Name of approved brand(s)	Name of medicating Ingredient	MIB	DIN
Bacitracin MD	Bacitracin (as bacitracin methylenedisalicylate)	BACN-M	02408317
Chlor 50 Medicated Feed Premix	Chlortetracycline hydrochloride	CTC	00641804
Chior 100 Granular Medicated Premix	Chlortetracycline hydrochloride	CTC	00698210
Chlor 250 Medicated Premix	Chlortetracycline hydrochloride, Sulfamethazine and Penicillin	CSP	00641979
Lincomycin 44 Premix	Lincomycin	LINC	02085844
Lincomycin 44 G Premix	Lincomycin	LINC	02091097
Lincomycin 110 Premix	Lincomycin	LINC	02089874
Lincomycin 110 G Premix	Lincomycin	LINC	02089882
Lincomycin Spectinomycin 4.4% G Premix	Lincomycin and Spectinomycin	LISP	02209098

Index contains:

- Name and address of manufacturer or drug proponent/sponsor
 - e.g., "Bio Agri Mix LP"
- Name of approved brand(s) listed under this particular manufacturer manufacturer/sponsor
 - e.g., "Chlor 50 Medicated Feed Premix"
- Name of medicating ingredient
 "Chlortetracycline hydrochloride"
- MIB code and link to the specific MIB
- Drug Identification Number (DIN) of each product (i.e., dilute drug premix)

Chlortetracycline hydrochloride (CTC) – Medicating Ingredient Brochure

This page is part of the Guidance Document Repository (GDR).

Looking for related documents?

Search for related documents in the Guidance Document Repository



Approved livestock species	Approved claim(s) (abbreviated) 1	Withdrawal time	Name of approved brand(s)
Beef and non-lactating dairy cattle	1. Aid in the prevention of foot rot	5 days (meat)	Aureomycin 220 G Granular Medicated Premix Chlor 50 Medicated Feed Premix Chlor 100 Granular Medicated Premix Deracin 22% Granular Premix

After clicking on the CTC link for "Beef and non-lactating dairy cattle":

Beef and non-lactating dairy cattle

Table of approved claims and brands

Approved claims	Name of approved brand(s)	Drug concentration in DIN product
Claim 1	Chior 50 Medicated Feed Premix	Chlorietracycline (equivalent to chlorietracycline hydrochloride) at 110 g/kg
Claim 1	Aureomycin 220 G Granular Medicated Premix Chlor 100 Granular Medicated Premix	Chlorletracycline hydrochloride at 220 g/kg
Claim 1	4. Deracin 22% Granular Premix	Chlortetracycline calcium complex equivalent to chlortetracycline hydrochloride at 220 g/kg

Claim 1

As an aid in the prevention of foot rot.

Level of medicating ingredient in a complete feed

At a level in the feed such that each animal will receive 0.22 mg of chlortetracycline hydrochloride per kg of body weight per day or 70 mg of chlortetracycline hydrochloride per head per day.

Directions for use in a complete feed

This livestock feed contains a medically important antibiotic. To reduce the development of antimicrobial resistance and maintain effectiveness, use this antibiotic prudently and for the shortest duration required to achieve the desired clinical outcome.

Feed this medicated feed continuously during the period animals are exposed to this disease.

Warning

- Treated animals must not be slaughtered for use in food for at least 5 days after the latest treatment with this drug
 when fed at the recommended rate of 70 mg of chlortetracycline hydrochloride per head per day.
- 2. Do not administer to lactating dairy cattle.
- When handling the product avoid inhalation, oral exposure, and direct contact with skin or eyes. (Required on premix and supplement labels only)
- 4. Keep out of reach of children. (Required on premix and supplement labels only)

Accepted Compatibilities

N

Page contains:

- The approved claim "As an aid in the prevention of foot rot"
- The level of medicating ingredient in a complete feed – "At a level in the feed such that each animal will receive 0.22 mg of chlortetracycline hydrochloride per kg of body weight per day or 70 mg of chlortetracycline hydrochloride per head per day."
- Directions for use including prudent use statement (because CTC is a medically important antimicrobial)
- Applicable Cautions and Warnings
- Accepted Compatibilities In this case there are none

Our scenario: CMIB-compliant medicated feed

- Commercial feed facility will be manufacturing a "Beef Supplement" containing CTC as an aid in the prevention of foot rot.
- The manufactured medicated feed is to be labelled as per the MIB for CTC
- ➤ The medicated 'Beef Supplement' is to be mixed on-farm with the remaining feed ingredients at a rate of 25 kg of the medicated supplement per tonne of complete diet including roughage
- ➤ The beef producer provides a **daily intake of 6 kg per/head/day** of the resulting medicated complete feed containing CTC to his beef cattle, which have an average body weight of 300 kg.
- ➤ How many kilograms of CTC product need to be added to the formulation of the medicated beef supplement?

Our scenario: CMIB-compliant medicated feed Option 1: 70 mg of CTC per head per day

Dose of CTC (from the MIB): 70 mg/head/day Complete diet daily intake: 6 kg/head/day Inclusion rate of Supplement in complete diet: 0.025 (25 kg Supplement/1000 kg of complete diet)

$$mg\ CTC\ per\ day\ in\ complete\ diet\ =\ \frac{Dose\ per\ head}{Intake}$$

Ex. 70 mg/6 kg = 11.67 mg CTC per kg complete diet

$$mg\ CTC\ in\ Supplement = \frac{Amount\ CTC\ in\ complete\ diet}{Inclusion\ rate\ of\ Supplement}$$

Ex. 11.67 mg/0.025 = 467 mg of CTC per kg of supplement

Our scenario: CMIB-compliant medicated feed Option 1: 70 mg of CTC per head per day

If we go one step back, how do we determine how much CTC product needs to be added to the medicated supplement that is manufactured by the feed mill?

- ➤ The MIB for CTC lists products with 2 different concentrations:
 - ➤ Ex. Chlor 50 contains 110 g CTC/kg of premix, whereas Aureomycin 220G has 220 g CTC/kg of premix
- ➤ The medicated supplement for beef cattle has a concentration of 467 mg of chlortetracycline hydrochloride per kg
- ➤ Then how much of the CTC product needs to be included in the formulation for the medicated beef premix that is manufactured by the feed mill?

Our scenario: CMIB-compliant medicated feed Option 1: 70 mg of CTC per head per day

$$kg \ of \ CTC \ product \ per \ 1000 \ kg \ of \ Beef \ Suppl = \frac{mg \ of \ CTC \ per \ kg \ Suppl}{mg \ of \ CTC \ per \ kg \ of \ DIN \ Product} * 1000 \ kg$$

To achieve 467 mg of CTC per kg of the Beef Supplement if the concentration of CTC product is 220 g/kg:

467 mg CTC per kg supplement/220,000 mg per kg CTC product * 1000 kg = 2.12 kg of CTC product

To achieve 467 mg of CTC per kg of the Beef Supplement if the concentration of CTC product is 110 g/kg:

467 mg of CTC per kg of Beef Supplement/110,000 mg per kg of CTC product *1000 kg = 4.25 kg of CTC product

Our scenario: CMIB-compliant medicated feed Option 2: 0.22 mg CTC per kg BW per day

Average weight of cattle = 300 kg

Dose: 0.22 mg CTC per kg BW

Complete diet daily intake: 6 kg/head/day

 $mg\ CTC\ per\ head\ per\ day = Dose\ in\ mgTkg*BW\ in\ kg$

Ex. 0.22 mg/kg BW * 300 kg = 0.66 mg CTC per head per day

 $mg\ CTC\ per\ kg\ of\ complete\ diet = \frac{mg\ CTC\ per\ head\ per\ day}{complete\ diet\ daily\ intake}$

Ex. 66 mg of CTC per head per day ÷ 2 kg of feed per head per day = 33 mg of CTC per kg of complete diet

So what is the new target concentration of CTC in this medicated supplement?

Using the same calculation as before:

 $mg\ CTC\ in\ Supplement = \ \frac{Amount\ CTC\ in\ complete\ diet}{Inclusion\ rate\ of\ Supplement}$

Ex. 33 mg CTC in complete diet/0.025 = 1320 mg of CTC in the medicated supplement

The Alternative: Off Label Use

- If upon reviewing the MIB for a specific medication and the desired use, level or species is not indicated:
 - The veterinarian may issue an off label prescription (also referred to as Extra Label use)
 - The feed is subject to all the information and labelling requirements specified in Sections 5(g) and 26(7)of the Feeds Regulations
 - The prescription is required to be issued and on hand at the feed mill prior to <u>manufacture</u> of the feed.

Off-label use – a reminder

- When prescribing a medication off label the veterinarian can be considered responsible for any residue violations due to communication of inappropriate withdrawal times.
- Veterinarians are highly recommended to contact CgFARAD for guidance regarding off label withdrawal periods.

Writing scripts – a reminder

When writing a veterinary prescription, the name and inclusion level of the medicating ingredient must be on the prescription.

On all veterinary prescriptions, the veterinarian **MUST** indicate if brand substitution is allowable or ensure that the particular product that is indicated on the prescription is available at the commercial feed mill where the feed will be manufactured.

Failure to do so may result in prescriptions being returned.

As an example:

ANIMALS TO BE TREATED								
Species	Production Type Age of Weight Nu			Number of	Animals	Location of Animals to be Treated		
			TREATMENT	DURATION				
# Days:								
Feeding Start Date	e (MM/DD/YYY):			Feeding End	Date (MI	M/DD/YYY):		
		MED	ICATED FEE	DINFORMAT	ION			
Type of Feed to be	e Medicated (Complete/Sup	plement,	/Macro):					
Name of Feed to I	be Medicated (if applicable):			Total Quant	ity of Med	dicated Feed Produ	uct (kg or tonnes):	
Brand Substitution Acceptable? Yes No								
DIN product BRAND NAME g of A				g of Al/kg of DIN		onne complete	g of DIN product/	
(Active ingredient, AI;)		product		feed		tonne of complete feed		
1.								
2.								
3.								

Cautionary note on using the CMIB

- The CMIB is a useful resource for the manufacture and labelling of medicated feed, however it remains your responsibility to be aware of the conditions of use inherent for each medication. For example:
 - ➤ If using the CMIB and prescribing multiple medications to be combined into a single feed, be mindful of any conflicting information. In all cases where there are contradictions in the directions, warnings or cautions of the combined medications, the most conservative use and restrictions will apply.

Want to keep up to date on the CMIB?

- You can use the CFIA's Email Notification Services to get updates emailed directly to you
 - Visit the CFIA's main web page (<u>www.inspection.gc.ca</u>)
 - Go to very bottom right hand corner of the Agency's main web page and under the heading "Stay connected", click on "Email notifications"
 - Under the heading "Sign up for" select "Animal health and feedrelated notifications" and enter your information and make your subscription selections
 - A listserv message is sent out to those signed up for the Animal health and feed-related notifications each time the CMIB is updated on the CFIA's website
 - New additions to the CMIB (DIN products, claims, new medicating ingredients)
 - Removal of DIN products from the CMIB
 - Changes to manufacturers/drug proponents

Do you have Questions about the CMIB?

 Submit your question to: cfia.afd-daa.acia@canada.ca

