

Antimicrobial Use in the Feedlot

Current and Future Uses



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Current Antimicrobial Use in the Feedlot



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Veterinary Prescriptions

Attending Clinic: Feedlot Health Mgmt. Services

Veterinarians: BK Wildman DVM, BN Warr BSc DVM, CW Booker DVM MvetSc, DL Johnson BSc MSc DVM, EJ Behlke BSc MSc PhD DVM, G Paradis DMV, GK Jim DVM, OC Schunicht BSc DVM, RD Rademacher BSc DVM, RK Fenton DVM, SJ Hannon DVM MvetSc PhD, T Perrett BScAgr DVM

Protocol:

Product	W/D Time	Dosage	Condition and/or Disease to Treat	Route	Prescribed	Remaining
Oxymyline LP	Meat: 18d, Mlk: 72h	3 mL/45 kg b.w. q24h 2-3d. Maximum 20 mL/injection site.	Arthritis (septic), systemic treatment Blackleg (Clostridium chauvoei), treatment Bovine respiratory disease (shipping fever/enzootic pneumonia), treatment/control Calf diphtheria (Fusobacterium necrophorum), treatment Enteritis (bacterial), treatment Malignant edema (Clostridium septicum), treatment Navel infections/Navel ill, treatment Pneumonia (bacterial), treatment	I.M. I.V.	2500	2500
Oxamin® Powder	Od	Mature cattle: Suspend package contents in 2.27 L (2 qt) water while stirring. When well mixed, give via drench or stomach tube q12h or q24h for 2-3d. Improvement should be observed within 12h.	Atony of the rumen, treatment Bloat, treatment Grain overload, treatment Indigestion/diarrhea (non-infectious), symptomatic treatment	Oral	5500	5500
Excide® 200 Sterile Suspension	Meat: 13d, Mlk: Od	Give single injection (in the loose S.C. tissue at posterior aspect of ear where it attaches to the head) at a dosage of 6.6 mg cellular equivalents/kg b.w. (1.5 mL/45 kg b.w.) Most animals will respond within 3-5d. If no improvement is observed, re-evaluate diagnosis.	Bovine respiratory disease (Mannheimia haemolytica, Pasteurella multocida, and/or Histophilus somni), treatment Footrot (Fusobacterium necrophorum and/or Perfringentia spp. (Bacteroides spp)), control and/or treatment	B.O.E.	20000	8900



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FEEDLOT HEALTH MANAGEMENT SERVICES LTD.
PO BOX 146, OROFOLDS, ALBERTA T1S 2A2
PHONE: (403) 938-1551 - FAX: (403) 938-5175

ORDER FOR PRESCRIPTION MEDICATED FEED (FIMS-NOR-2018-1)

MANUFACTURER: Korova Feeders Ltd. OWNER: Korova Feeders Ltd.
Box 65 Box 65
Arore, Alberta Arore, Alberta
T0M 0A0 T0M 0A0
Attention: Joe Lofthouse

Species: Bovine Producer Type: Feedlot Age: <2 yr Weight: 250-650 kg No. of Animals: 15,000 Sex: Heifer/Steer
Type of Premises to be Included in the Complete Feed: Concentrated medicated ingredients dispensed by a micro machine
Total Quantity: Please refer to the total medicated ingredient dispensing document that states the total allowable number of bags of medicated ingredients that can be dispensed during the period indicated by this prescription.

Generic Name of Ingredients	Trade Name of Product	Prescribed Level of Drug in the Complete Diet
Monomixin Sodium	Ramensin® Premix	25 mg/kg diet dry matter
Chlortetracycline	Chlor 100 Premix	35 mg/kg diet dry matter

Mixing Instructions: Thoroughly mix 0.125 kg of monomixin sodium premix and 0.159 kg of chlortetracycline premix (220 g/kg) into 1000 kg of complete feed (100% dry matter basis) to achieve the above prescribed levels of monomixin sodium (25 mg/kg diet dry matter) and chlortetracycline (35 mg/kg diet dry matter).

Caution:
Monomixin Sodium

- Do not exceed recommended levels as reduced average daily gains may result.
- Do not allow dogs, horses, other equines, or guinea fowl access to formulations containing monomixin. Ingestion of monomixin by these species has been fatal.
- Do not use Ramensin medicated feed for the treatment of outbreaks of coccidiosis.
- May be used in feeds containing the pellet-binding agent Bentonite (2%), Attapulgite (2%), Kaolin (2.5%), Lignin Sulfonate (4%), Carboxymethylcellulose (0.1%), or Agri-Cellicid.
- Not to be used after expiration date. Do not use isotropic supplements after four weeks storage.

Warning:

- Do not supplement monomixin from other sources (e.g. other feedstuffs containing monomixin or the Ramensin Controlled Release Capsule).
- Do not administer to lactating dairy cattle.
- Treated animals must not be slaughtered for use in food for at least 8 days following the last treatment with this medicated feed.

Manufacturing Instructions: Not applicable
Repeat: This prescription shall fulfill the requirements of the feedlot for the period from October 31, 2018 to October 31, 2019.

Date: October 31, 2018 Signed: [Signature]
The cautions, medicating ingredients, and warning statements on this prescription have been discussed with the owner by the above signed veterinarian.

Owner/Manager: _____ Oliver C. Schunicht, DVM, B.Sc.

In-Feed Antimicrobial Use

- 97% of animals received in-feed antimicrobials at some point (standard conventional feedlot production)
- Ionophores (non-Medically Important Antimicrobials = MIAs) represented > 89% of in-feed Antimicrobial Use
- Macrolides
 - tylosin was used to prevent/control liver abscesses
- Tetracyclines
 - 2 main indications: to prevent/control liver abscesses and to prevent/control histophilosis

Antimicrobial Use in Canadian Feedlot Cattle: Collection, Summary and Leadership Related to Future National Surveillance Initiatives

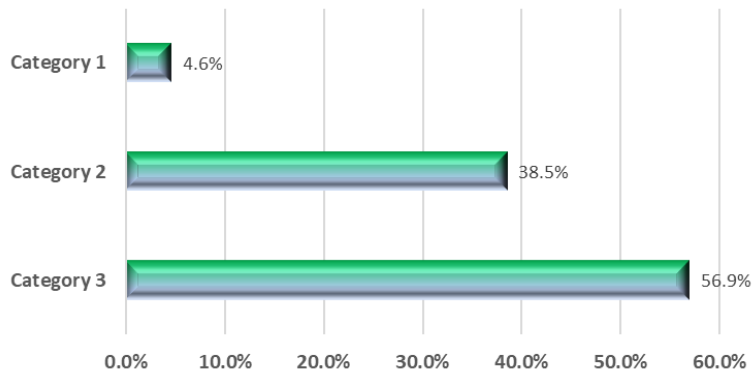


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Parenteral Antimicrobial Use

92.9% of parenteral AMU was targeted against BRD

Parenteral MIA Use by Category

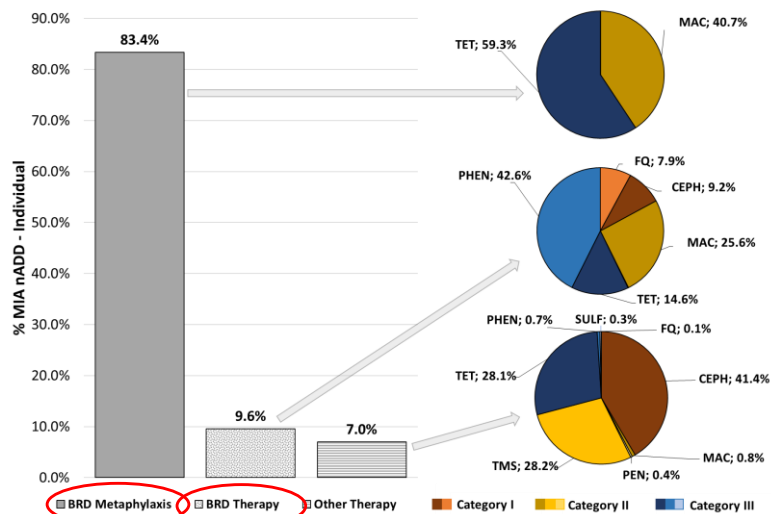


Antimicrobial Use in Canadian Feedlot Cattle: Collection, Summary and Leadership Related to Future National Surveillance Initiatives



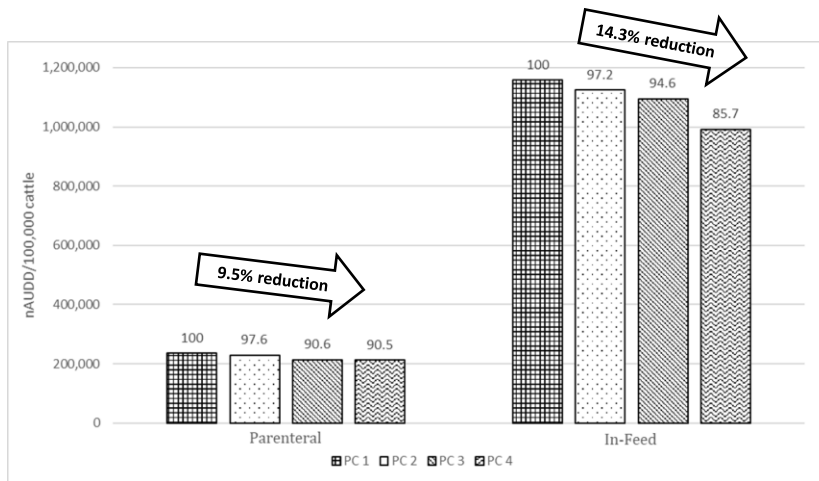
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Parenteral AMU: MIA by antimicrobial class and by indication of use



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Parenteral and in-feed AMU in number of animal used daily doses (nAUDD)/100,000 cattle in each placement cohort (PC)

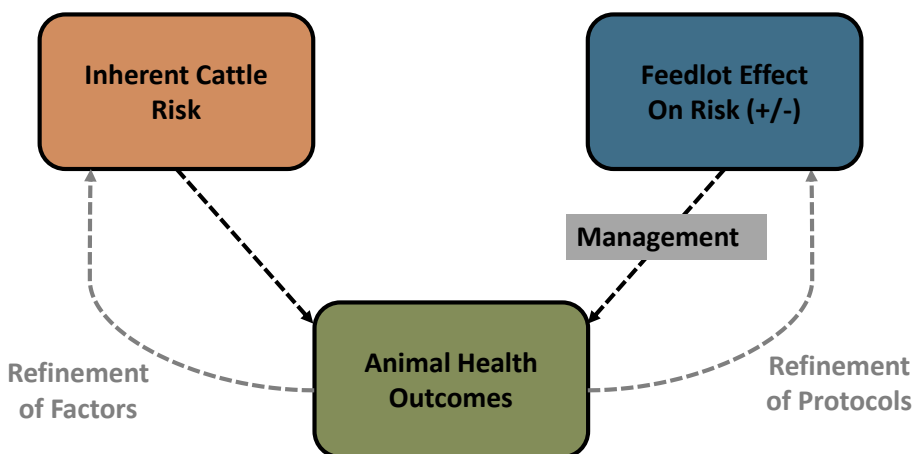


Cattle placed Nov 2008 – Oct 2012



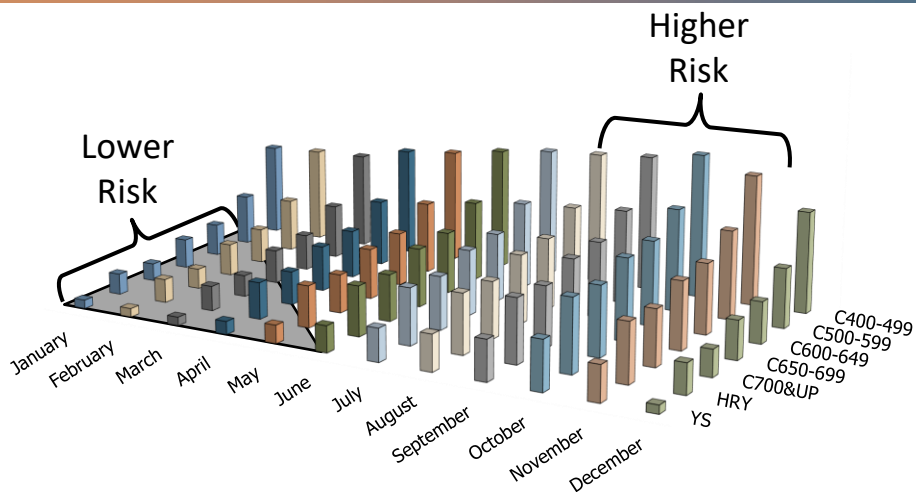
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BRD Metaphylaxis – Risk Assessment & Assignment

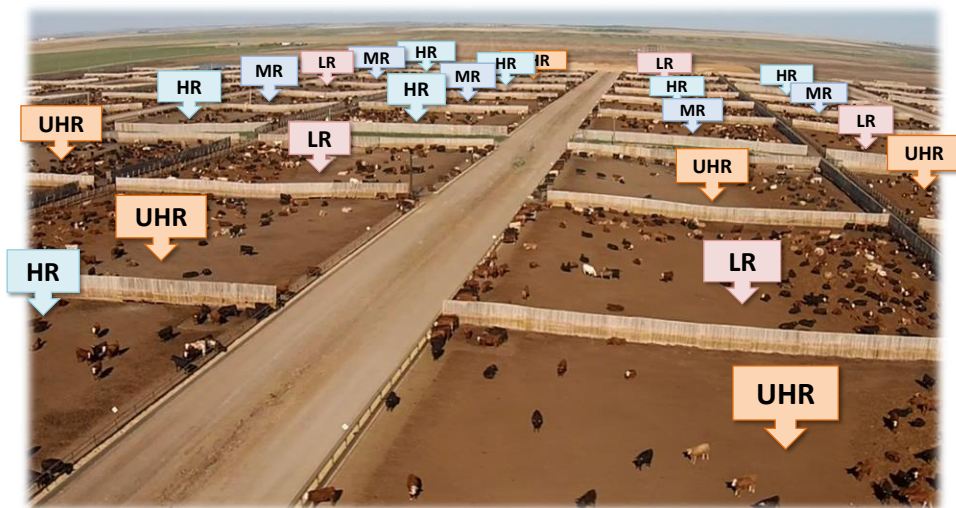


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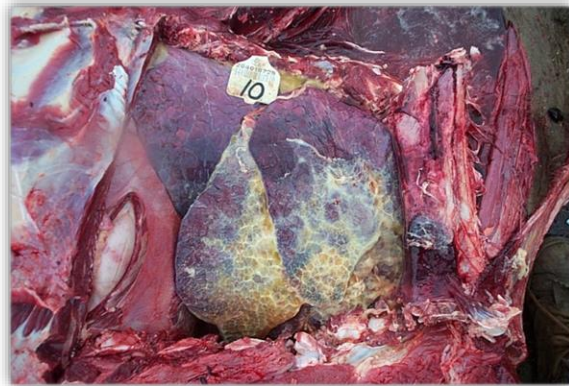
BRD Metaphylaxis – Risk Assessment & Assignment



BRD Metaphylaxis – Risk Assessment & Assignment



BRD Treatment



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BRD Treatment – Data Driven Protocols

ifHMS - Korova Feeders Ltd.

File Edit View Grid Window Help

Animal Treatment * Daily Treatment Report by Facility

Facility: Treatment side Event Date: Oct 31, 2019 Charge: TX-1

Tag: P 292 Wgt: 300 Temp: 105.0 Show All To: 504

National ID: 840003207165318 Dx: UF Occ: 1 Tx Day: 1

Home Pen: 504 Cur Pen: 504 Products / Procedures:

Lot: 1825 WD Date: Nov 09, 2019 Type Product Route Rec'd Qty Qty Unit Inj Loc

DOFADG: 40-0-0-0-0-0-0-0-0-0 FLFL RESF SQ 18 18 mL

Instruction: **Treat with Resflor at 6 mL/100 lb. SQ on day 1 only. Send home on day 1**

Message:

Message History

Event History

Date	Type	Message
Sep 21, 2019	AP	CERT NR 9185669549

Event Date	Event	Dx	Dx Description	Life/Dx Occ	Tx Day	Weight	Temperature	To Pen	Ratio Entry
Sep 21, 2019	AP				2	300	100		
	SB	BS	Bov-Shield Gold FPS	IM					
	3L	INF	Inforce 3	IM					
	TU	DR	212-Droxon	SQ					
	TR	UL	360-Ultra Bsc 7 Sombac	SQ					
	MH	PR	Prepense SQ	SQ					
	NT	NT	300-Numbered Tag	EA					
	AV	IVP	376-Ivermectin Four-On	TO					

Usage Recorded

User: Dr. Type Permet: NLM Last Synch Date: Oct 31, 2019 2019-10-31



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BRD Triggers and Intervention

Infectious Monitoring Alert by Pen

Reporting Date: Jan/16/2015
 Placement Date: Oct/07/2014 to Dec/06/2014

Trigger for Evaluating Need for Intervention

Trigger	Type	Description	Threshold	Incremental
HS	Calf Ranch	Acute HS Mortality	0.5%	0.5%
HS	Feedlot	Acute HS Mortality	0.5%	0.5%

HS = in feed prevention and control

Pen: 39 was triggered because Acute HS Mortality was over 0.5%

Pen	Lot Numbers	Age Class	Gender	Health Risk	Hd Placed	Total Mort	DOF			BRD Treatments				PM		
							Min	Avg	Max	AF	UF	NF	Chronic	Inf Mort	BRD	HS
39	14FS140	C	S	UHR	314	2 .64%	41	42.9	46	0 0%	18 5.73%	17 5.41%	1 .32%	2 .64%	0 0%	2 .64%



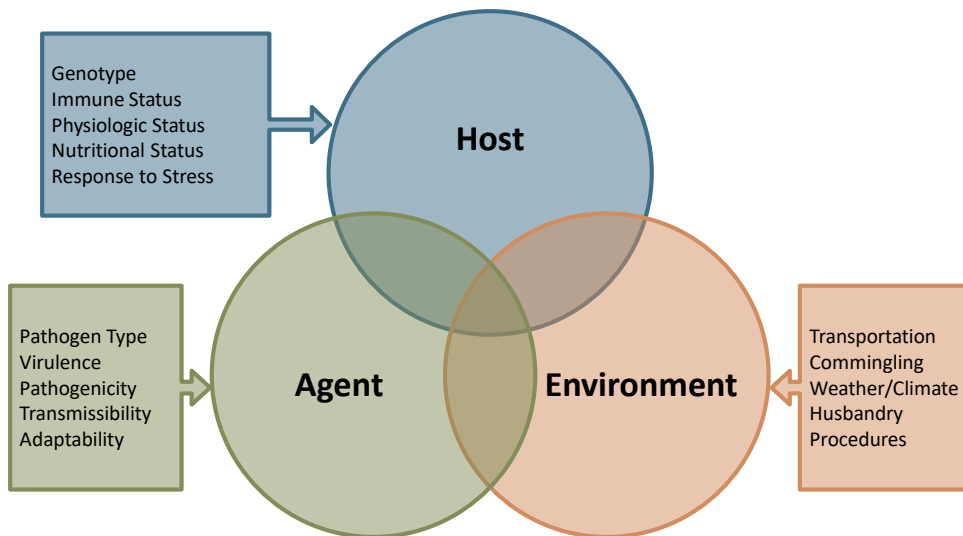
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Future Antimicrobial Use in the Feedlot



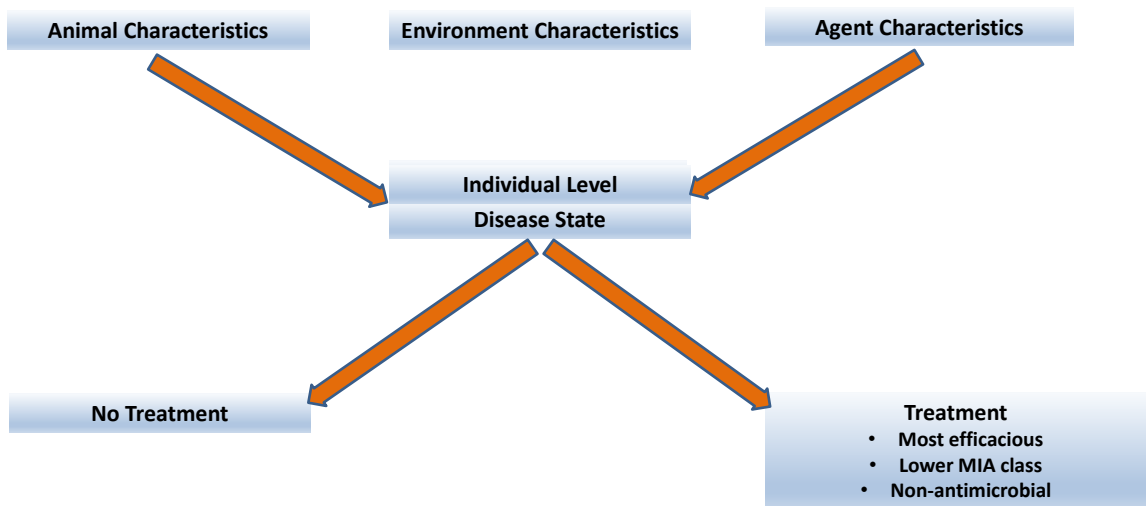
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Bovine Respiratory Disease Complex – It's Complex



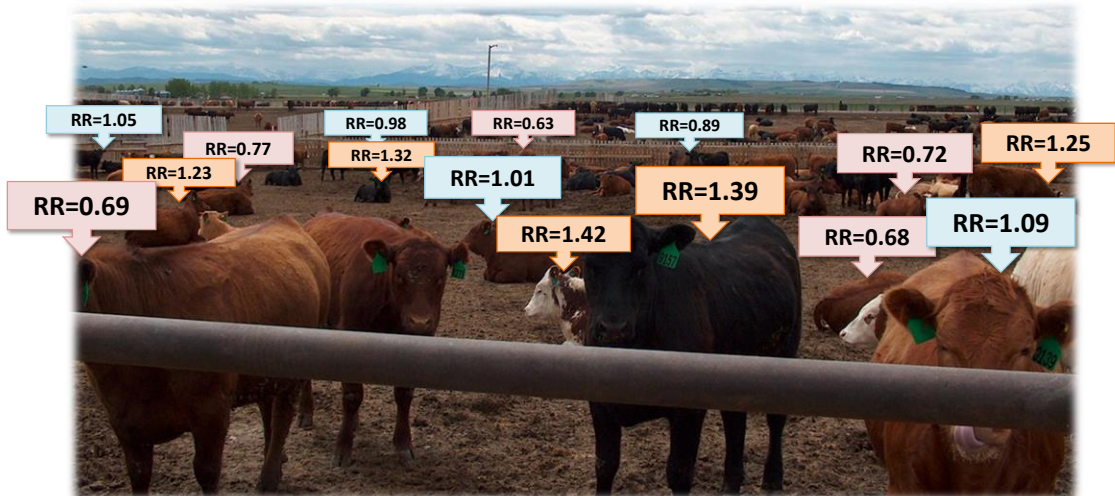
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Precision Medicine – Risk Assessment



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Precision Medicine – Individual Level Risk



Precision Medicine - Behaviour Monitoring Systems



Precision Medicine – “Chute Side” Tests



**Pathogen and Host
Molecular
Diagnostics**



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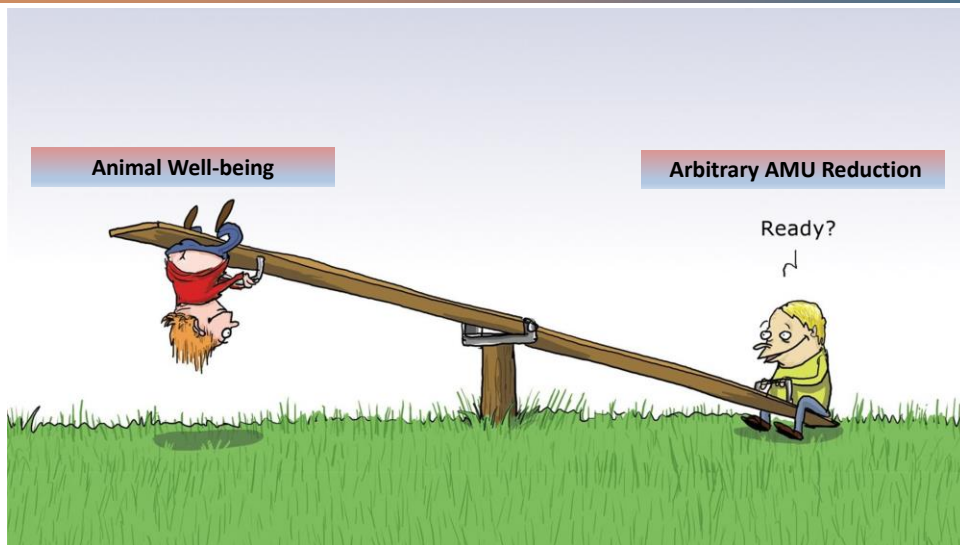
Future Antimicrobial Use - Alternatives

- **Non-antimicrobial compounds**
- **Bacterial therapeutics - modifying the naso-pharyngeal biome**
- **Improved vaccine technology**
- **Immunostimulants/modulators**
- **Enhanced husbandry practices**



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Balancing Antimicrobial Use and Animal Well-Being



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Feedlot Health
Management Services



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