Dry Cow Treatment

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Overview

- Why use dry cow treatment?
- Monitoring dry cow program
- What is available?
- Internal teat sealant
- Selective dry cow treatment?

Why?

- **Eliminate infections at end of lactation**
- **Prevent infections during dry period**
- **Used by approximately 90% of herds (Dufour et al. 2012)**
- **Part of the NMC recommended mastitis control plan**
- **Farms that use dry cow treatment have half the risk of having a *Staph. aureus* problem (Bauman et al. 2018)**

Monitoring program

PLOT LS BY LS\RTZY

		TEST DATES								
		11/30	1/13	3/ 3	4/20	6/ 6	7/20	8/23	10/13	12/19
LS										
Chronic	%	13	9	9	8	8	8	9	11	11
	#	11	7	8	7	7	7	9	9	8
New Inf	%	1	10	4	7	4	6	5	4	7
	#	1	8	4	6	3	5	5	3	5
Cured	%	6	2	7	5	5	3	2	6	5
	#	5	2	6	5	4	3	2	5	4
Clean	%	80	79	80	80	83	83	83	80	77
	#	69	65	72	74	70	72	79	66	57
HiFresh	%		9	8	17	18	21	33	18	8
	#		2	1	2	2	5	2	2	2
LoFresh	%	100	91	92	83	82	79	67	82	92
	#	9	20	12	10	9	19	4	9	23
Cure Risk		32	18	44	38	38	27	18	35	31
New Risk		1	11	5	8	5	7	6	5	8

HiFresh Targets:

Good:	**<5%**
OK:	**10%**
Bad:	**>10%**

What is available?

- **Cephapirin (Cefa-Dri, Boehringer)**
- **Cloxacillin (Dry-Clox, Boehringer)**
- **Penicillin and novobiocin (Novodry, Zoetis)**
- **Ceftiofur (Spectramast DC, Zoetis)**

How do these perform?

- **Arruda et al. (2013)**
  - **Cephapirin vs ceftiofur**
  - **No difference between treatments**
  - **>90% cure rate of existing infection**
  - **10-15% risk of new infection**
- **Davidson et al. (1994)**
  - **Penicillin/novobiocin vs cloxacillin**
  - **No difference between treatments**
  - **>90% cure rate of existing infection**
  - **~10% risk of new infection**

Internal teat sealant

- Bismuth Subnitrate (Orbeseal, Zoetis)
- Prevents entry of bacteria
- Golder et al. (2016)
  - Antibiotic ± teat sealant
  - Teat sealant + antibiotic reduced new infection rate ~ 50% compared with antibiotic alone
  - Lower SCC with teat sealant
- Kromker et al (2014):
  - Teat sealant alone
  - Reduced new infection rate ~90%
- Can we use this to reduce antibiotic use?

Selective dry cow treatment

- Antibiotic use increases resistance (Saini et al. 2012, 2013)
- Selective treatment: only treat infected cows with antibiotics
- Internal teat sealant for all cows to prevent new infections
- How do we identify infected cows?
- Culture?
  - On-farm?
  - Submit to lab?
- Somatic cell count?
  - What cut off?

Culture

- Cameron et al. (2015)
  - On-farm culture
  - Cure rate and new infection rate did not vary
  - Milk production did not vary in following lactation
- On-farm culture needs training and experience
- Initial investment in equipment
- Submit to lab:
  - Delay in results
  - Cost
- Can we use SCC?

SCC and selective dry cow treatment

- **Scherpenzeel et al. (2016):**
  - **SCC at end of lactation cut-offs for infection**
  - **Which has greatest economic benefit?**
  - **Heifers SCC >150,000 = infected**
  - **Cows SCC> 50,000 = infected**
- **Variation between farms as to ideal cutoff**
- **SCC is less accurate than culture**

Take home messages

- **Individual antibiotic dry treatments do not vary significantly**
- **Internal teat sealants are effective**
- **Selective dry cow treatment is practical but requires identification of infected cows**

Questions?