

Pneumonia prevalence and management in pre-weaned dairy calves

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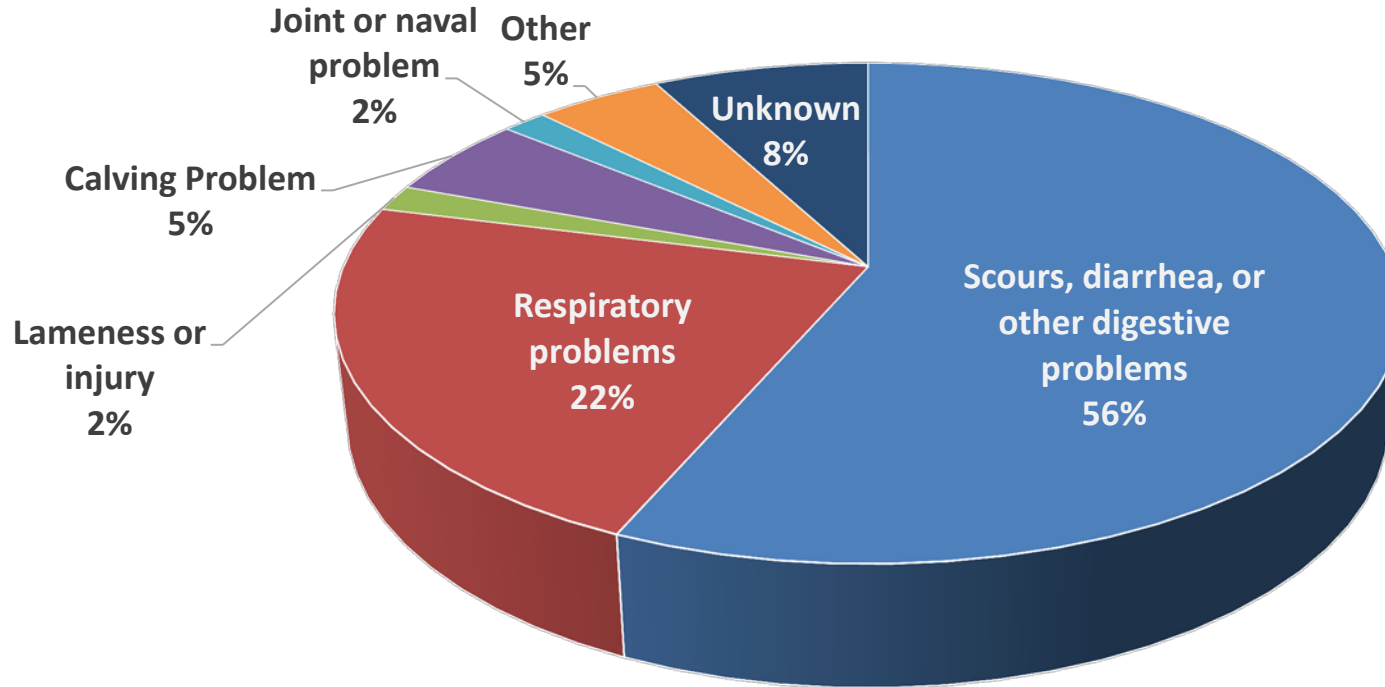
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Cooperative Extension

Dairy Advisor – Northern
Sacramento Valley



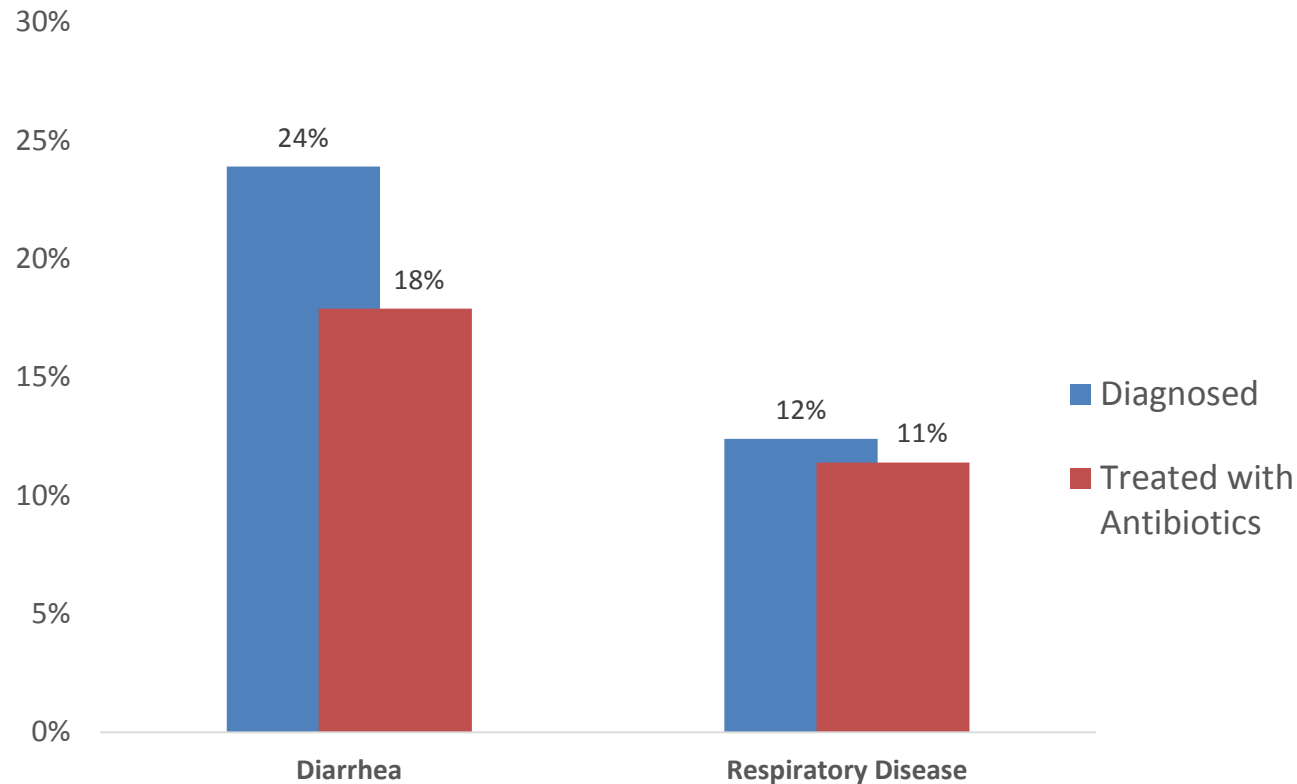
What's Killing our Calves?



7.8% death rate for pre-weaned calves in U.S.

NAHMS 2007

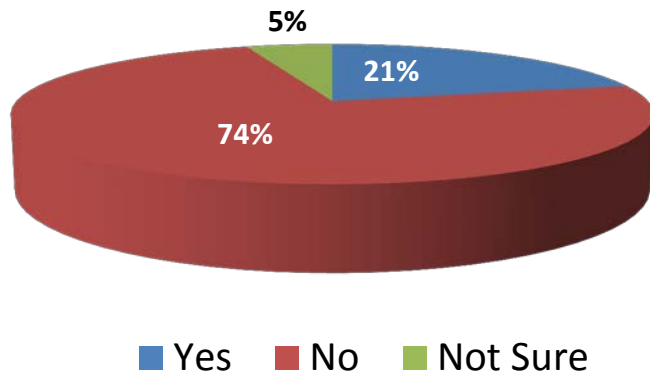
What's making calves sick?



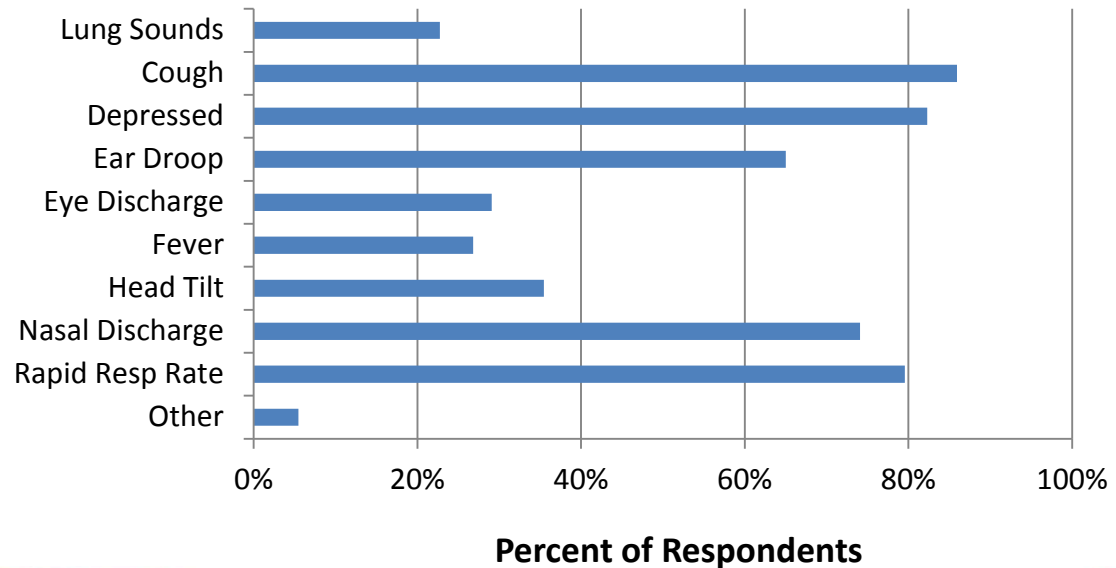
NAHMS 2007

Disease Monitoring & Prevention

Is a scoring system or facility specific protocol used to diagnose pneumonia?















Which of the following signs are regularly used to diagnose pneumonia in calves on your dairy?



Karle et al. 2014

Bovine respiratory disease scoring system for pre-weaned dairy calves^{1,2}

Clinical sign	Score if normal	Score if abnormal (any severity)²		
Eye discharge	0 	2  Or  Or 		
Nasal discharge	0 	4  Or  Or 		
Ear droop or Head tilt	0 	5  Or  Or 		
Cough	0 No cough	2 Spontaneous cough		
Breathing	0 Normal	2 Rapid or difficult breathing		
Temperature	0 < 102.5° F	2 ≥ 102.5° F		

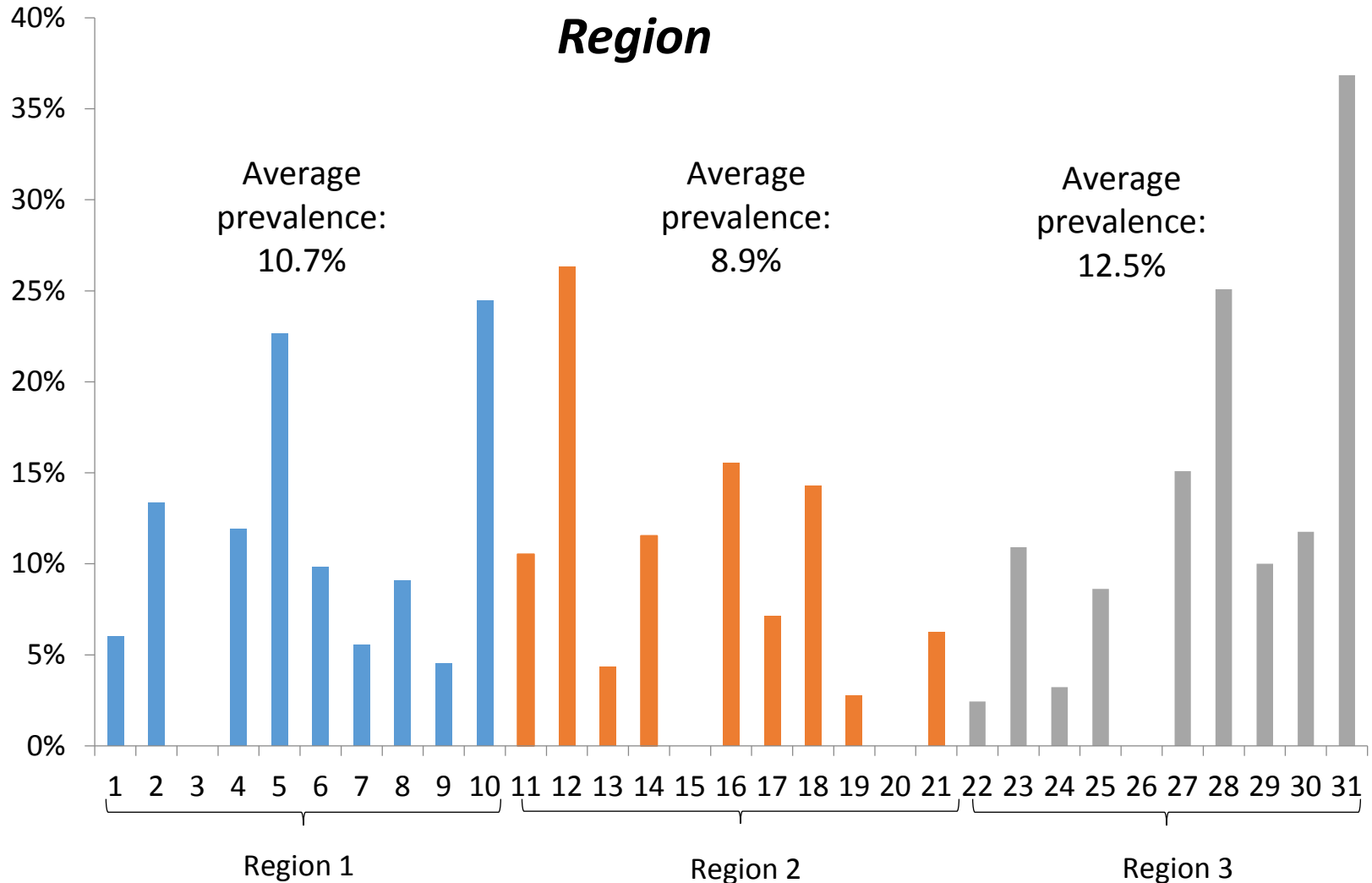
Add scores for all clinical signs, if total score is ≥ 5, calf may be positive for bovine respiratory disease

1: Love WJ, Lehenbauer TW, Kass PH, Van Eenennaam AL, Aly SS. (2014) Development of a novel clinical scoring system for on-farm diagnosis of bovine respiratory disease in pre-weaned dairy calves. PeerJ 2:e238 <https://peerj.com/articles/238>.
 2: Aly SS, Love WJ, Williams DR, Lehenbauer TW, Van Eenennaam AL, Drake C, Kass PH, Farver TB. (2014) Agreement between bovine respiratory disease scoring systems for pre-weaned dairy calves. Animal Health Research Reviews. IN PRESS
 3: Any abnormality including, but not limited to, the examples shown in the above pictures.

Table 1: Demographics and Prevalence by Region

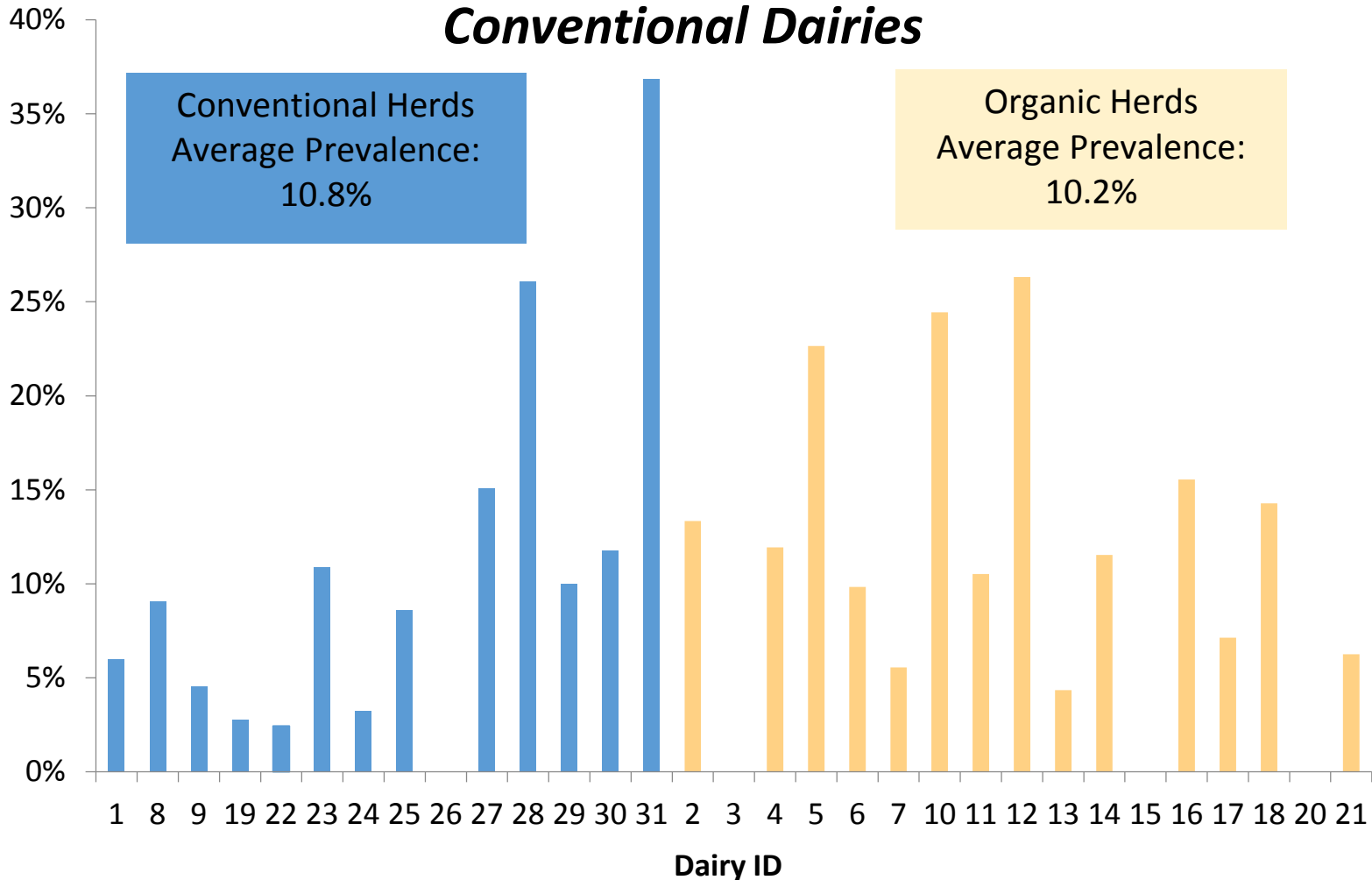
	Region 1	Region 2	Region 3
	Humboldt & Del Norte Counties	Sonoma, Marin & Mendocino Counties	Glenn, Tehama & Yuba Counties
	Mean (range)	Mean (range)	Mean (range)
Herd Size	788 (120-3,500)	305 (185-570)	1,009 (175-3,300)
Qts. colostrum fed in first 12 hrs.	4.25 (3-8)	3.4 (2-8)	3.6 (1-6)
Age calves moved to group pens (d)	95 (30-150)	77 (10-110)	62 (21-100)
No. pre-weaned calves on site	117 (17-450)	58 (23-150)	163 (20-500)
BRD prevalence (%)	10.7 (0-24.4)	8.9 (0-26.3)	12.5 (0-36.8)

Prevalence of BRD in Pre-Weaned Calves by Region

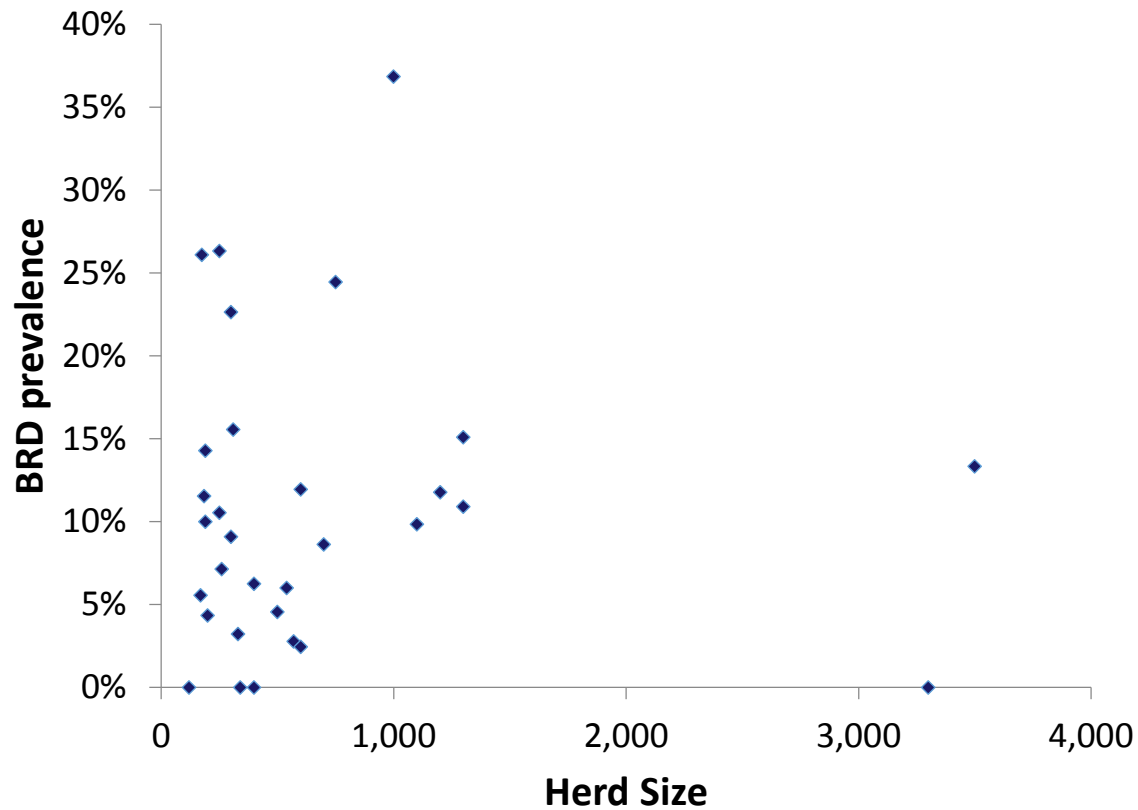


Dairy ID

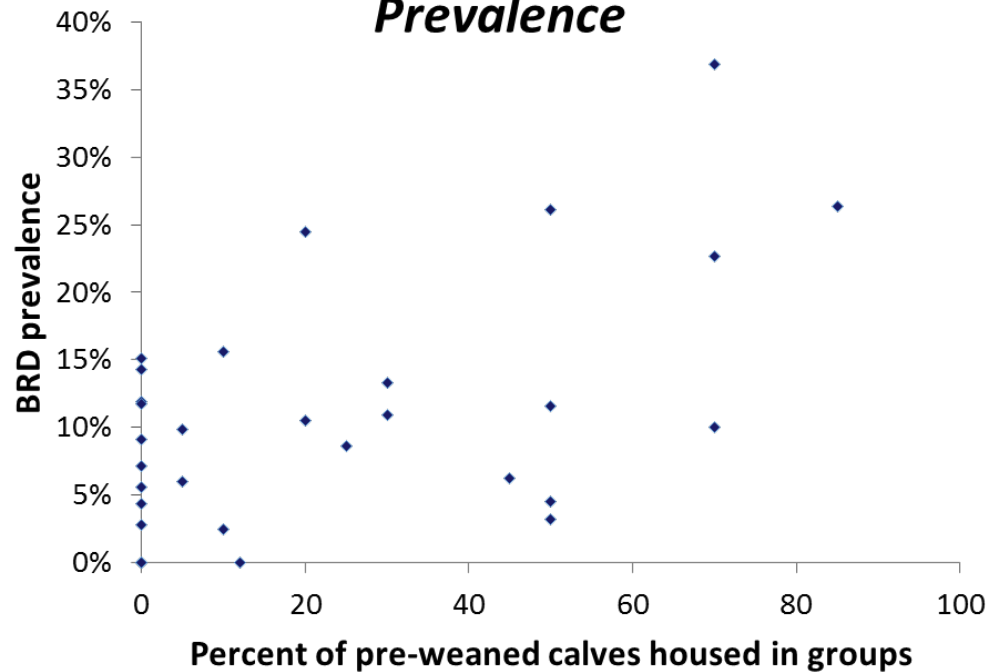
Prevalence of BRD on Organic and Conventional Dairies



Prevalence of BRD by Herd Size



Group Housing and BRD Prevalence



	Odds ratio	Std. Error	p-value
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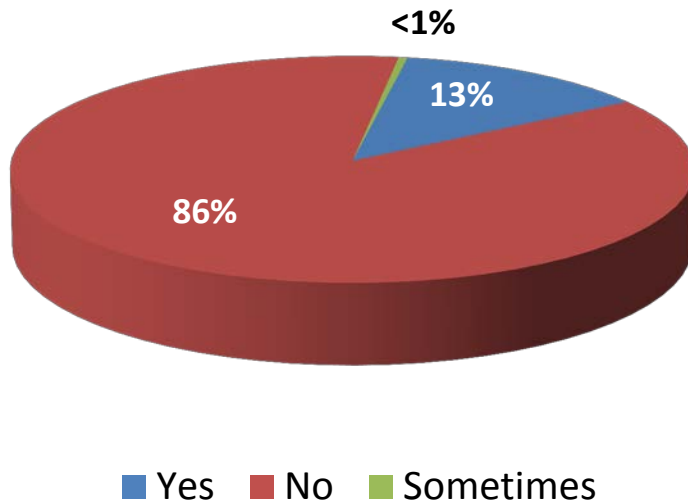
Number of calves per pen

One	†		
Each additional calf	1.08	0.013	<0.001

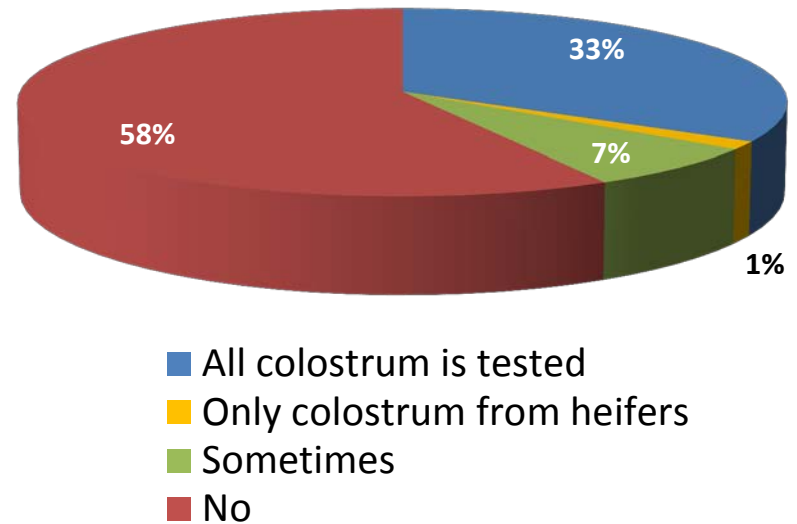
† = reference category

Colostrum Management

Is colostrum pasteurized?

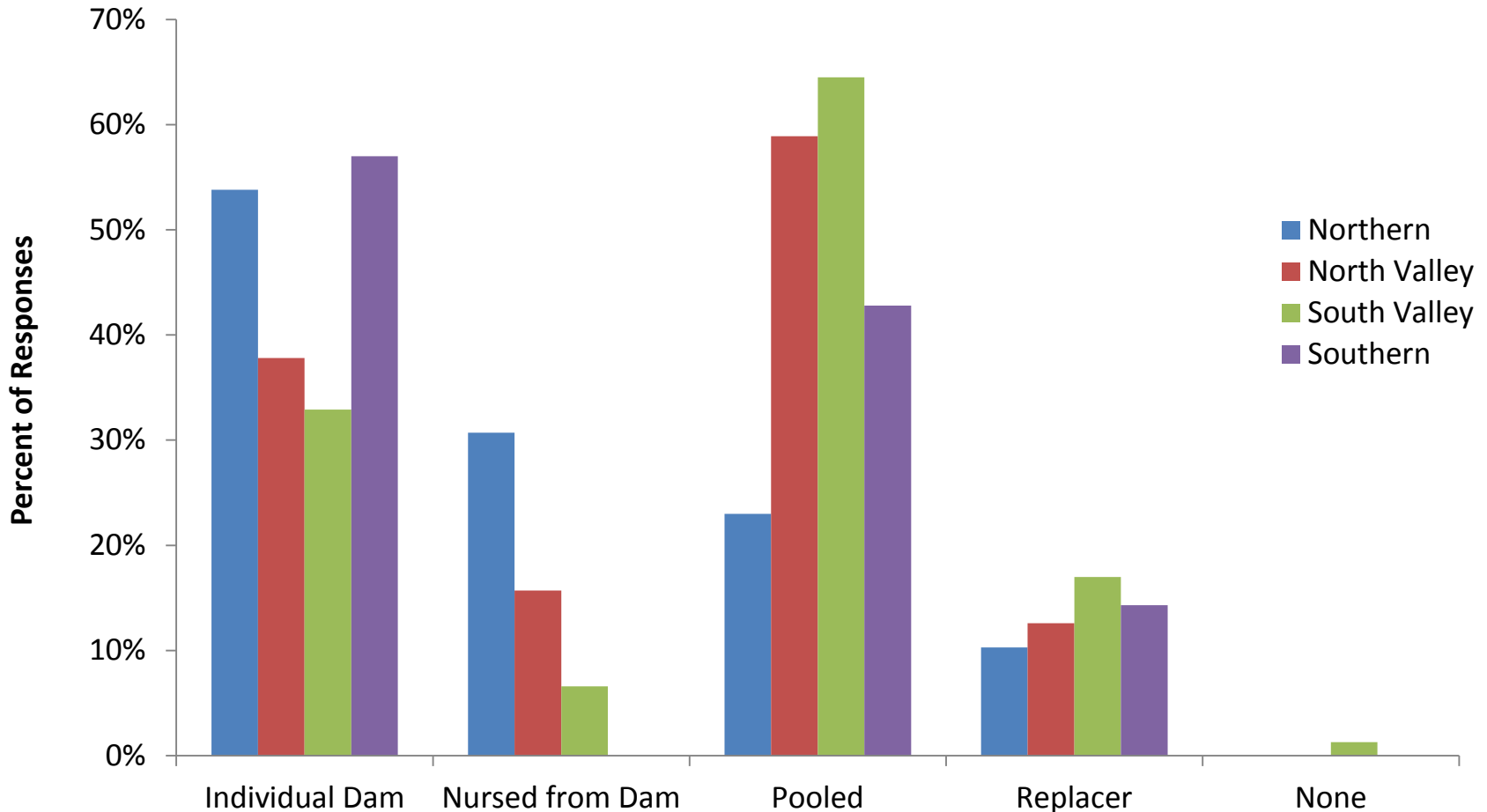


Is colostrum quality tested (i.e. refractometer or colostrometer)?



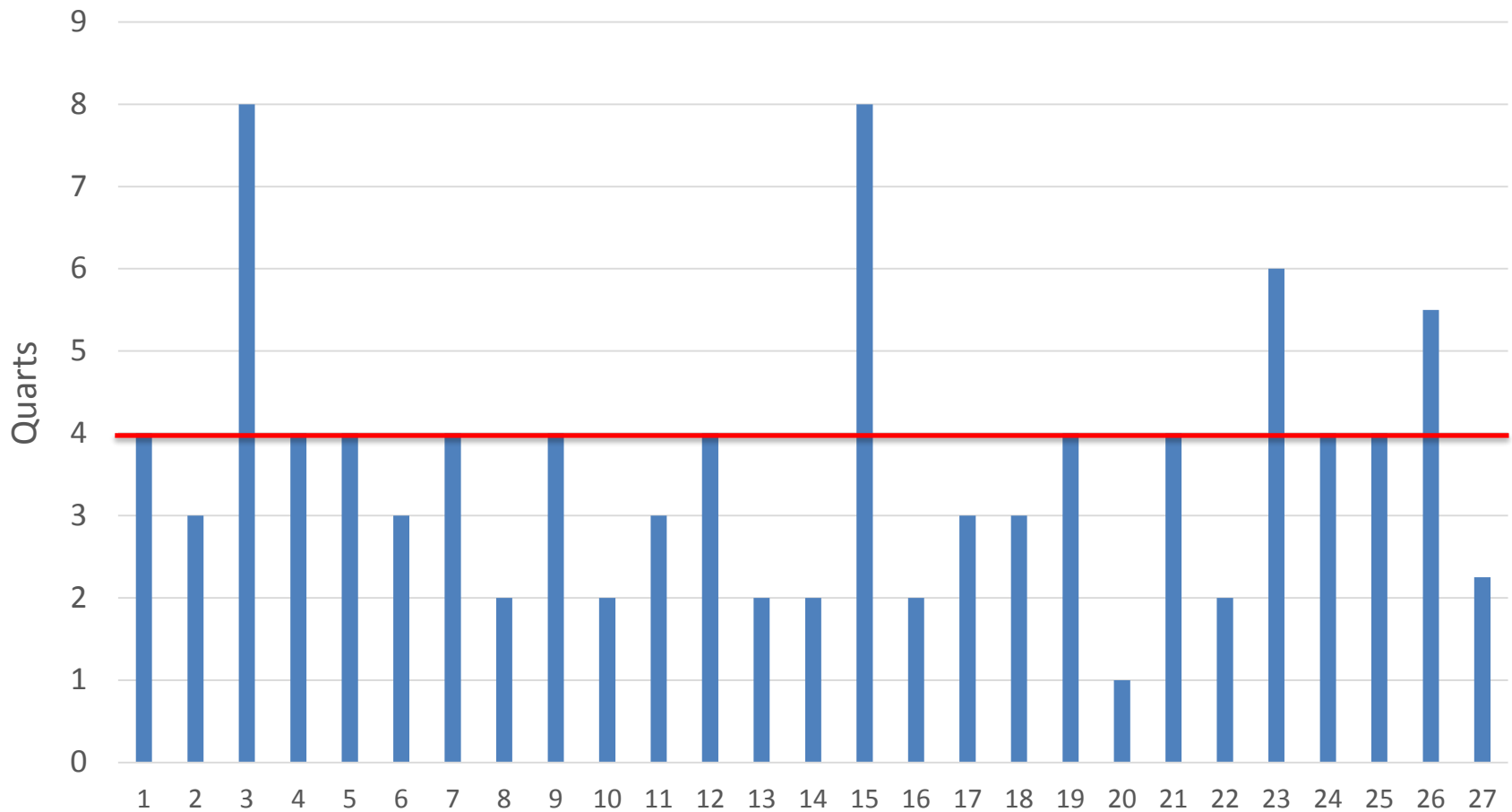
Karle et al. 2014

Colostrum Source for Heifer Calves



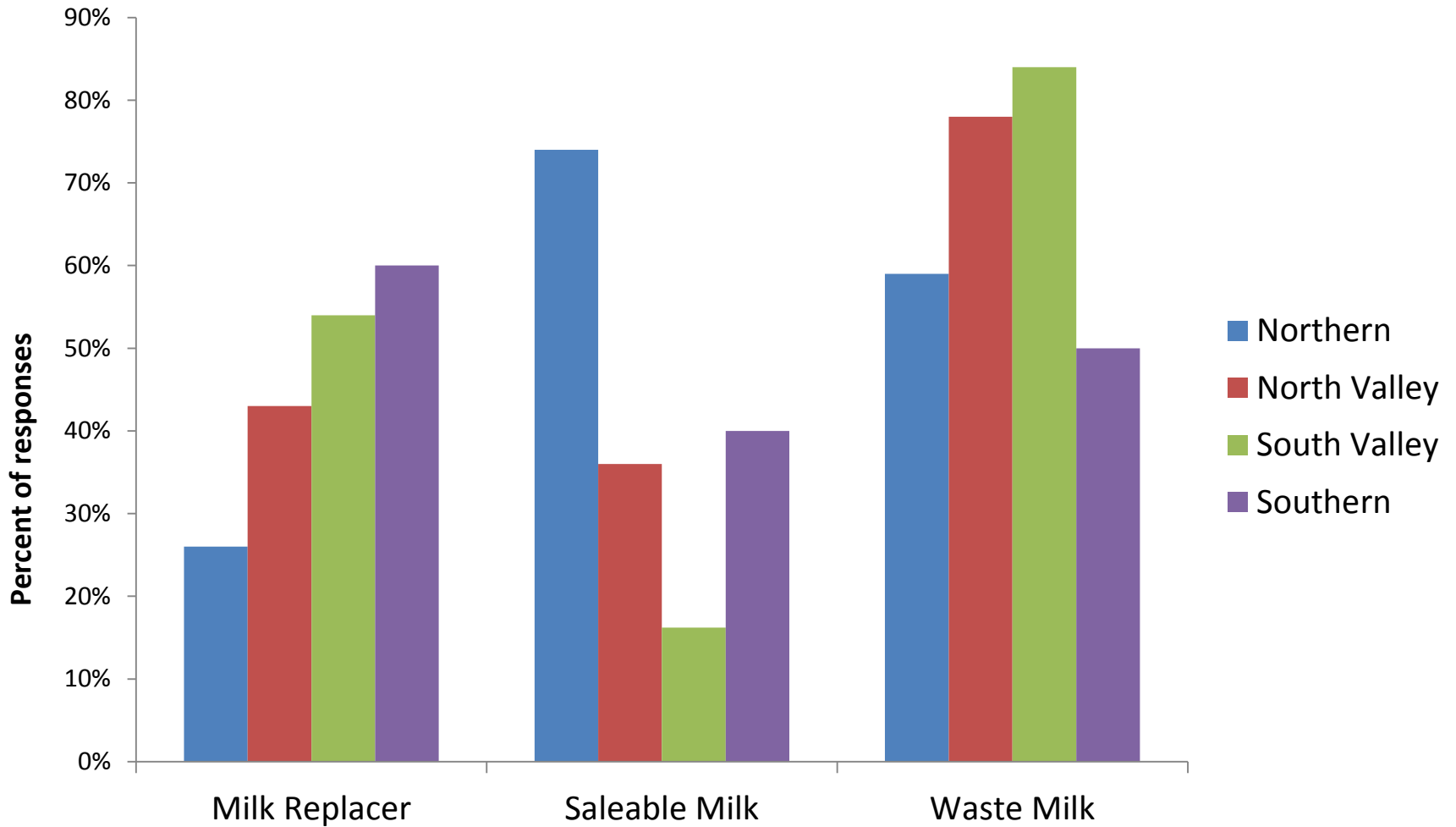
Karle et al. 2014

Colostrum Volume (quarts) in first 12 hours



Karle et al. 2015

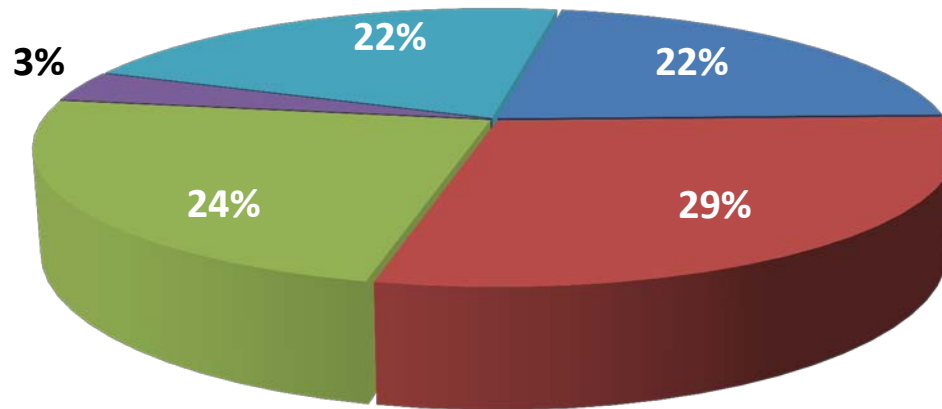
Source of Milk



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Calf Milk Management


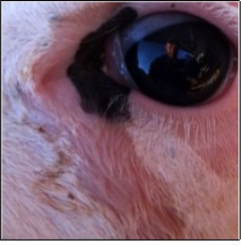

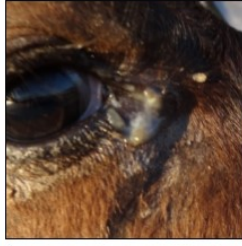
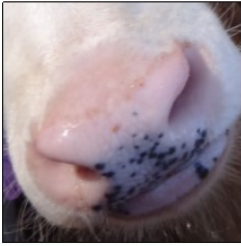
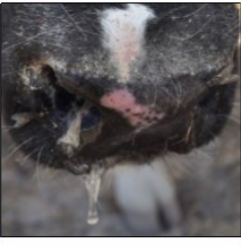

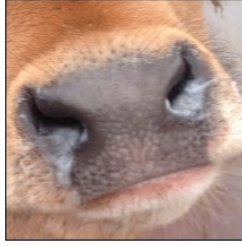
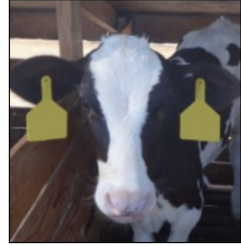
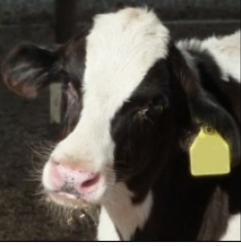

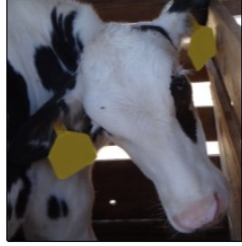
Are any of the following used to treat or supplement the milk or milk replacer?



■ Medicated ■ Pasteurization
■ Milk plus Replacer ■ Other
■ None

Karle et al. 2014

Enfermedad respiratoria sistema bovina (BRD) de puntuación de los lecheros pre-destete¹

Síntomas Clínicos	Puntos normal	Puntaje anormal (cualquier gravedad) ²			
Secreción Ocular	0 	2  Or  Or 			
Secreción Nasal	0 	4  Or  Or 			
Oídos Caídos/ Cabeza Inclinada	0 	5  Or  Or 			
Tos	0 No tos	2 Tos Espontanea			
Respiración	0 Normal	2 Respiración Rapida, Dificil, Fatigada			
Temperatura	0 < 102.5° F	2 ≥ 102.5° F			

Añadir puntajes para todos síntomas clínicos si la puntuación total es ≥ 5 pantorrilla puede ser positive para BRD

1: Love WJ, Lehenbauer TW, Kass PH, Van Eenennaam AL, Aly SS. (2014) Development of a novel clinical scoring system for on-farm diagnosis of bovine respiratory disease in pre-weaned dairy calves. PeerJ 2:e238 <https://peerj.com/articles/238>.

2: Cualquier anomalía incluyendo, pero no limitado a, los ejemplos mostrados en las imágenes anteriores.

Project Team

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