

Reconstituted alfalfa hay in starter feed improves health status of dairy calves during pre-weaning

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INTRODUCTION

Little is known regarding the effects of feeding reconstituted vs. dry alfalfa hay to dairy calves on health criteria. Twenty neonate Holstein male calves were used to investigate the effect of feeding reconstituted vs. dry alfalfa hay on health status.

AIM
 The aim of the present study was to evaluate the effects of feeding starter feed containing dry (AH) vs reconstituted (RAH) alfalfa hay at 10% of dietary dry matter on health status of calves during the pre-weaning period.

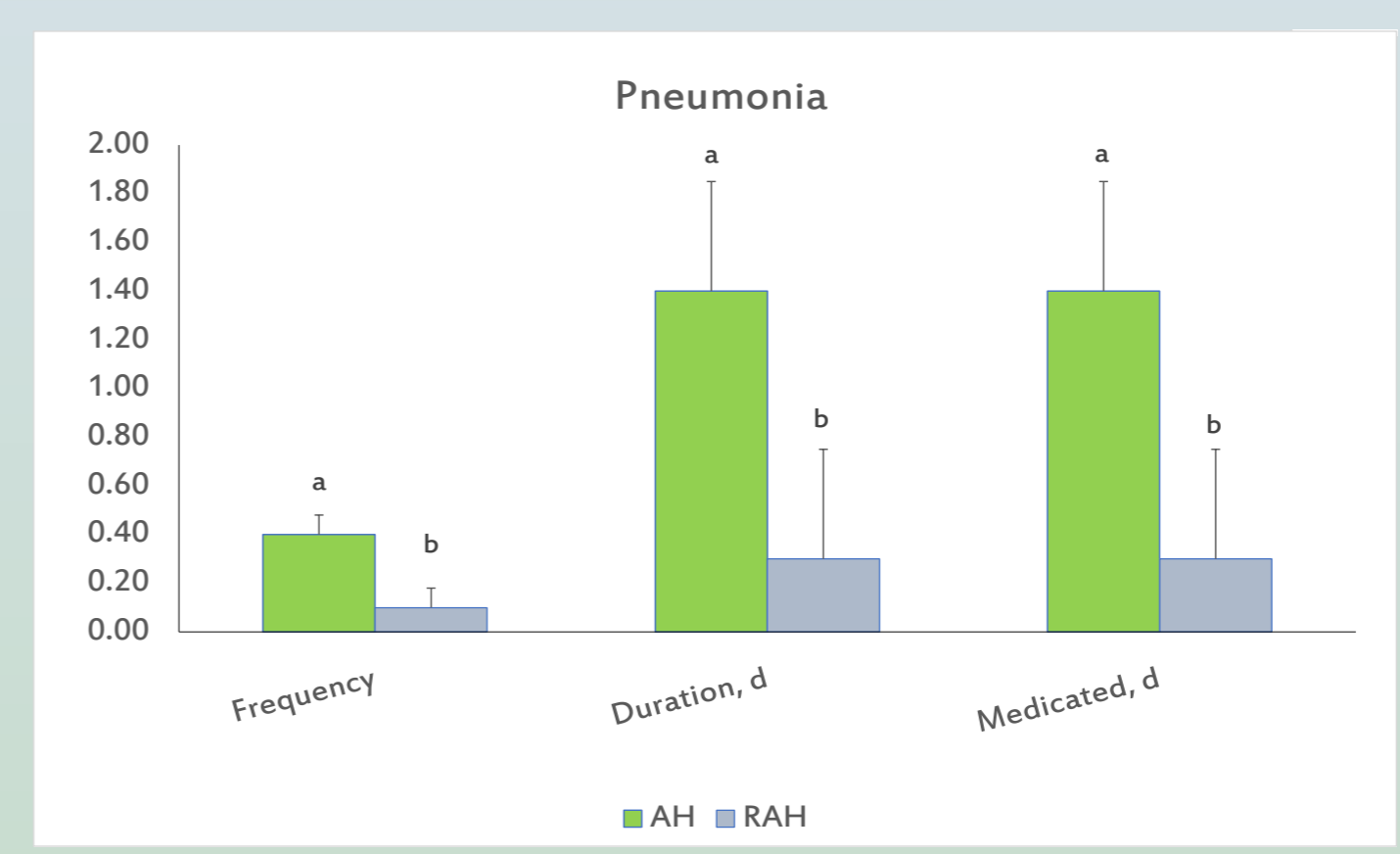
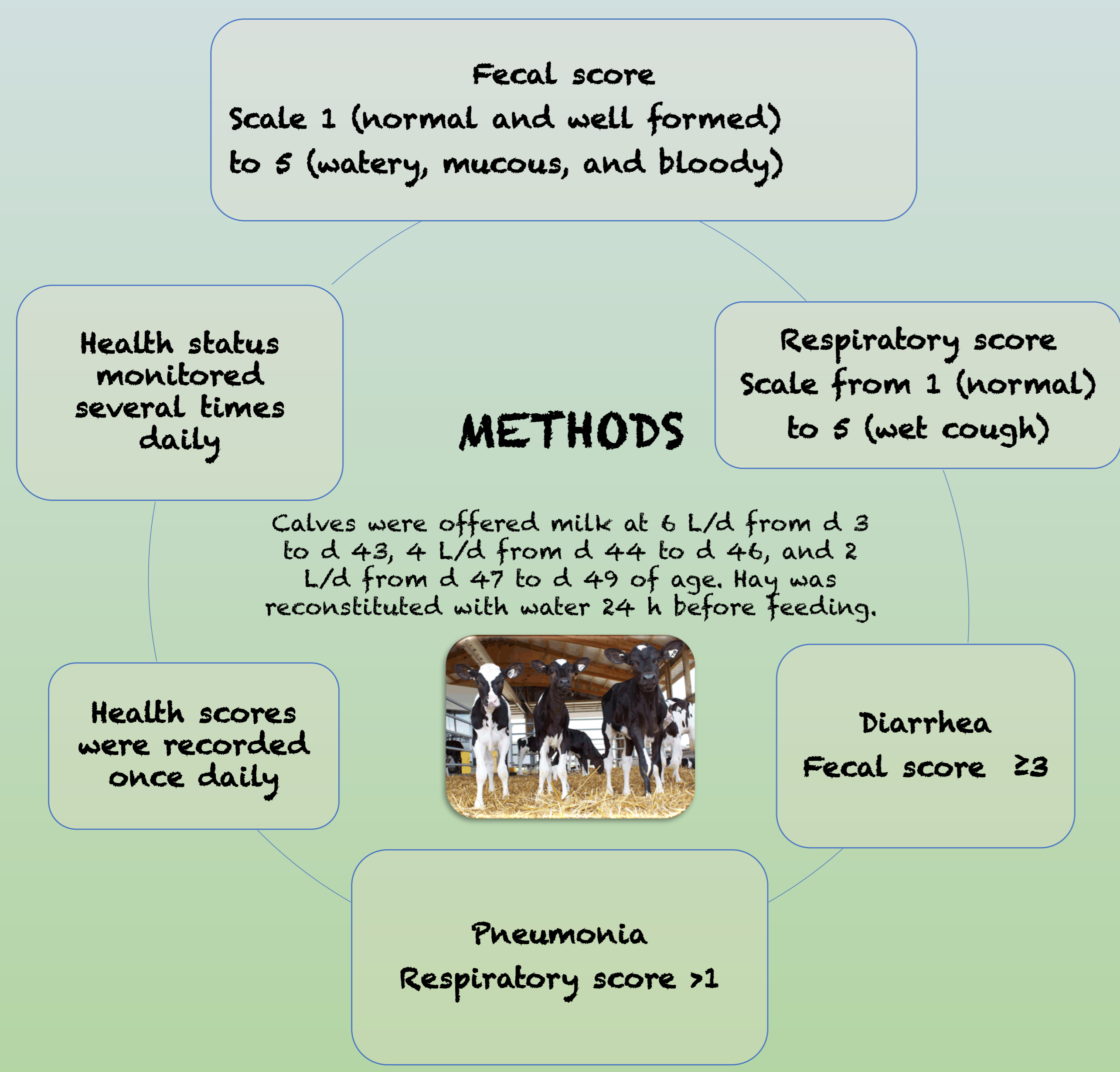


Figure 1. Poisson regression for frequency and duration of pneumonia and days medicated during the pre-weaning (d 1 to 49) period as influenced by feeding dry- (AH) vs. reconstituted alfalfa hay (RAH) to Holstein dairy calves.

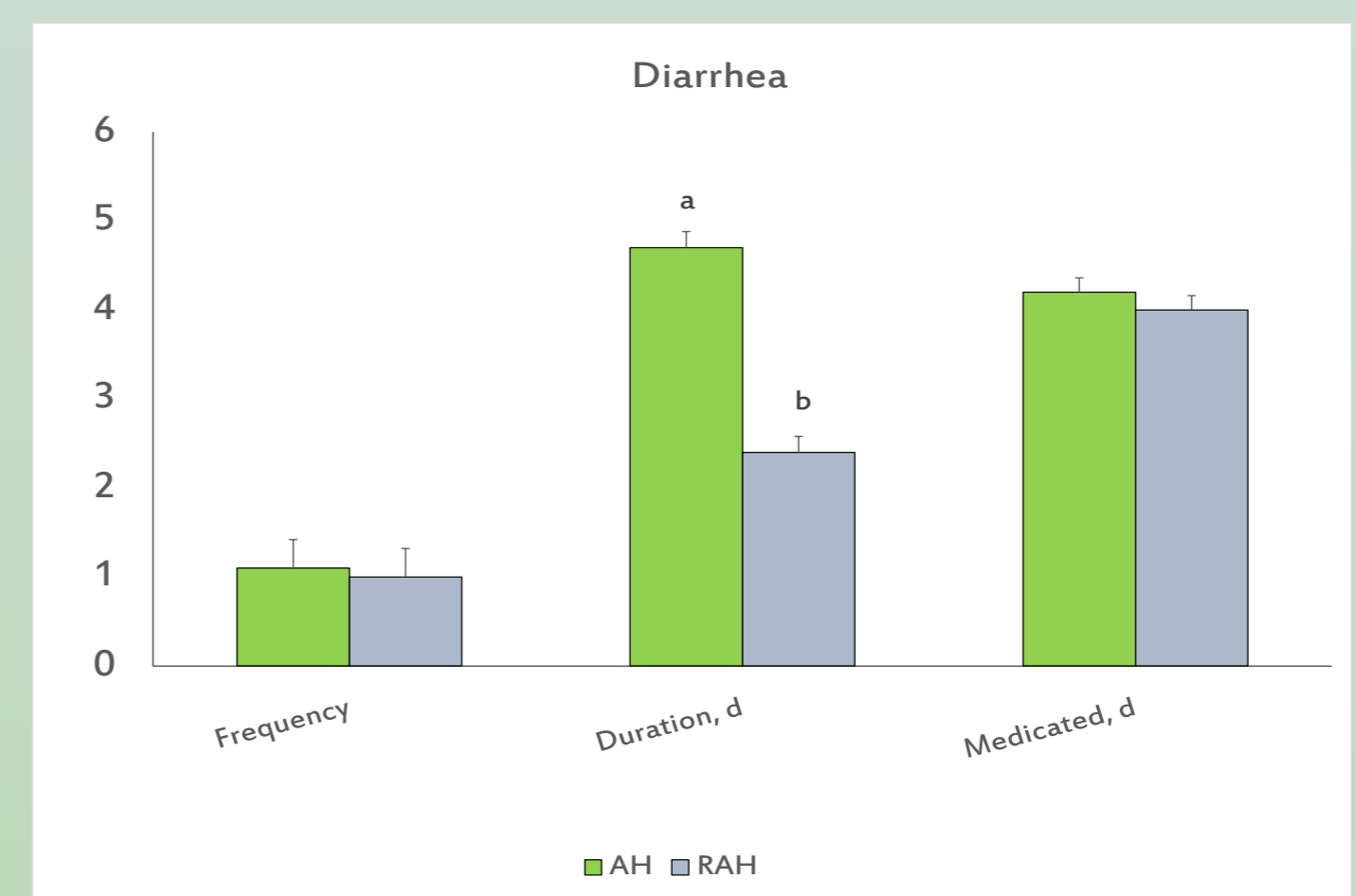


Figure 2. Poisson regression for frequency and duration of diarrhea (≥ 3), and days medicated during the pre-weaning (d 1 to 49) period as influenced by feeding dry- (AH) vs. reconstituted alfalfa hay (RAH) to Holstein dairy calves.

Table 1. Logistic models for diarrhea (≥ 3), pneumonia, and medication occurrence during the pre-weaning (d 1 to 49) period as influenced by feeding dry- (AH) vs. reconstituted alfalfa hay (RAH) to Holstein dairy calves.

Variable and comparison	Coefficient	SEM	Odds ratio ²	95% CI	P-value
Diarrhea occurrence	0.7066	0.26	2.02	1.20, 3.40	0.007
Pneumonia occurrence	15.564	0.63	4.74	1.35, 6.59	0.01
Medication occurrence					
Diarrhea	-0.7066	0.26	0.49	0.29, 0.83	0.007
Pneumonia	-1.5564	0.63	0.21	0.06, 0.73	0.01

¹Where 1 = normal; 2 = soft to loose; 3 = loose to watery; 4 = watery, mucous, and slightly bloody; and 5 = watery, mucous, and bloody.
²The odds ratio (OR) indicates the probability of either having diarrhea (≥ 3), pneumonia, or needing medication for the AH vs. RAH diet. If the OR is > 1 , the AH diet in the comparison is more likely to have diarrhea (≥ 3), pneumonia or to be medicated than the RAH diet by a factor of the difference above 1. If the OR is < 1 , the AH diet has a lower probability of occurrence than the RAH diet.

Statistical analysis: Models for occurrence of diarrhea, respiratory illness and needs for medication by logistic regression using a binomial distribution in the GLIMMIX procedure in SAS were evaluated. Frequency and duration of diarrhea, respiratory illness and administration of medication with a Poisson distribution using the GENMOD procedure of SAS were tested.

Take home message

Feeding RAH improves health status through decreasing the occurrence of diarrhea and respiratory illness.