

Table S1. Commercial kits employed to perform RT-PCR analysis. Positive results were assumed when an amplification curve was observed before cycle 45 (Ct < 45).

Etiology	Commercial kit
<i>Mycoplasma bovis</i>	LSI VetMAX™ <i>M. bovis</i> Kit, Applied Biosystems®, US
<i>Histophilus somni</i>	LSI VetMAX™ <i>H. somni</i> Kit, Applied Biosystems®, US
<i>Mannheimia haemolytica</i>	BactoReal® Kit <i>M. haemolytica</i> , Ingenetix®, Austria
<i>Pasteurella multocida</i>	LSI VetMAX™ <i>P. multocida</i> , Applied Biosystems®, US
BVDV	LSI VetMAX™ BVDv Screening, Applied Biosystems®, US
BHV-1	BoHV-1 dtec qPCR Test, Genetic PCR Solutions®, Spain
BRSV and PI-3	LSI VetMAX™ Triplex bRSV & PI-3 kit, Applied Biosystems®, US

Table S2. Prevalence of pneumonia in relation with age and management system. IM: intensive management; MM: mixed management; EM: extensive management; n: number.

Management system	Total % (n)	Veal	Yearling
Intensive	16.86 % (153/907)	17.45 % (111/636)	15.87 % (43/271)
Mixed	21.98 % (31/141)	26.97 % (24/89)	13.46 % (7/52) ^b
Extensive	24.53 % (13/53)	35.71 % (10/28)	12.00 % (3/25)
Global (IM+ MM + EM)	17.98 % (198/1101)	19.26 % (145/753)	15.23 % (53/348)

Table S3. Parameter estimates of the model predicting log odds of severity of lesions (log -probability of be grade II (severe)/probability of be grade I (mild)) and crude and estimated occurrence of severe lesion.

	LS mean (SE) ¹	Odds ratio (95% CI) ²	P- value	Crude prevalence ³	Estimated prevalence ⁴
Type of pneumonia					
Chronic	-0.56 (0.278)	Reference		0.405	0.363
Acute	-0.28 (0.426)	1.33 (0.546-3.246)	0.5270	0.461	0.431
Production system					
Intensive	-0.21 (0.255)	Reference		0.435	0.449
Mixed	-1.12 (0.438)	0.40 (0.167-0.973)	0.0434	0.250	0.247
Extensive	-0.06 (0.574)	1.31 (0.399-4.276)	0.6568	0.538	0.515
Type of animal					
Veal	-0.20 (0.284)	Reference		0.432	0.451
Yearling	-0.64 (0.375)	0.64 (0.316-1.302)	0.2171	0.358	0.345
Sex					
Male	-0.29 (0.317)	Reference		0.437	0.427
Female	-0.55 (0.332)	0.78 (0.406-1.484)	0.4420	0.398	0.367

¹ LS: Least square means on the logit scale and standard error of the mean (SE); ² CI: confidence limits; ³ Number of cases with severe lesions/total of pneumonia cases; ⁴ Least square means on the probability scale (farm nested to system was not included in the model because of its variance was not different from zero).

Table S4. Etiological agents identified by PCR in each type of pneumonia. M. hae: *Mannheimia haemolytica*; M. bov: *Mycoplasma bovis*; H. som: *Histophilus somni*; P. mult: *Pasteurella multocida*; BHV-1: bovine herpesvirus serotype 1; BRSV: bovine respiratory syncytial virus; PI-3: parainfluenza virus type 3; BVDV; bovine viral diarrhea virus.

Etiological diagnosis RT-PCR	Chronic (40)	Acute (10)	Total (n=50)
M. hae	2	1	3
M. bov	8	2	10
H. som	2	0	2
P. mult	1	0	1
M.hae + M.bov	6	3	9
M.hae + M.bov + H.som	0	1	1
M.hae + M.bov + P.mult	2	0	2
M.hae + P.mult	1	0	1
M.hae + M.bov + H.som + P.mult	1	0	1
M.bov + H.som	3	1	4
M.bov + P.mult	3	1	4
BHV-1	1	0	1
BRSV	1	0	1
PI-3	1	0	1
BHV-1 + M.hae + M.bov	1	0	1
BRSV + P.mult	1	0	1
BRSV + PI-3 + M.hae + M.bov	2	0	2
PI-3 + P.mult	1	0	1
BVDV + P.mult	1	0	1