Seroprevalence of bovine leukosis virus, bovine viral diarrhea and *Neospora caninum* and effect on productive and reproductive performance in bovine dairy farms

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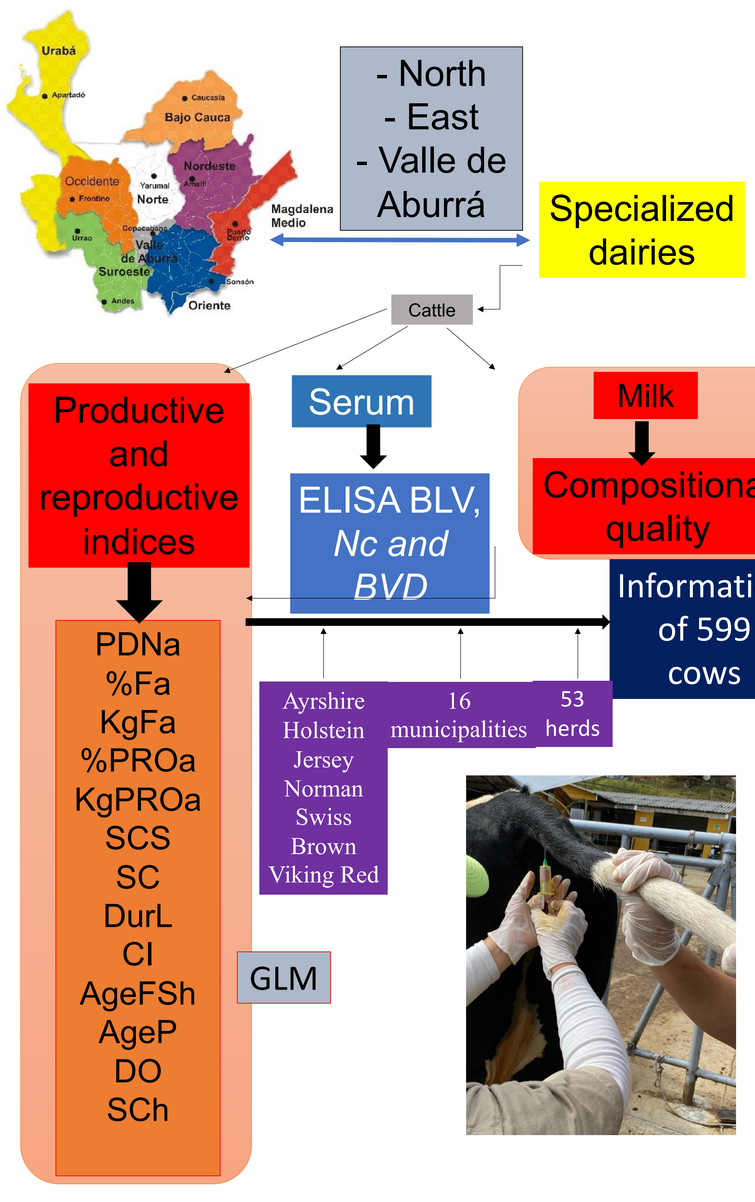
Infection with both viral and bacterial pathogens in dairy cows can negatively affect herd productivity and reproduction. Information from 1363 lactation records was obtained corresponding to 599 dairy cows of different breeds, distributed in 16 municipalities of the North, East and Valle de Aburrá regions of the department of Antioquia.

Objective: To determine, in dairy cattle from the department of Antioquia (Colombia), the effect of seropositivity to BLV, BVD, Nc, and its coinfection on productive and reproductive performance.



Results and discussion

Descriptive analysis of the productive and reproductive characteristics in cows (n=599) in specialized dairy herds in the department of Antioquia, Colombia.

Variable	General mean	Standard deviation	Minimum	Maximum
PNDa	5566.5	983	3036	7489
KgPROa	179.5	31	31.2	96.8
KgFAa	218.5	41.7	101	360
DurL	308	41.1	202	400
SCS	3.62	1.74	0.0566	9.12
AgeFSh	547	94.7	300	749
AgeP	1531	650	585	3706
DO	111	55.9	30	259
SCh	1425	0.879	1	6
SC	1.89	1.25	1	10
CI	386	54.1	303	539

PDNa: adjusted milk production (Kg), DurL: lactation duration (Days), KgPROa: protein in kilograms adjusted, KgFAa: fat in kilograms adjusted, SCS: somatic cell score, AgeFSh: age at first service in heifers, AgeP: age to calving, DO: days open, SCh: services per conception in heifers, SC: services per conception, CI: calving interval. Parameters adjusted to 305 days of lactation.

Results of association analyzes of productive and reproductive variables with BLV serumdetection in 599 cows in 53 herds from milk production regions in Antioquia-Colombia, South America.

Variable	P value model	R^2	Odds ratio	Fount of variation	P va-lue	Average + cows	Average -cows
PDNa	<0 .001	0.10	0.98	BLV	0.10	5500	5633
KgPROa	<0 .001	0.12	0.92	BLV	**0.01**	**165.4**	**180**
KgFa	<0 .001	0.19	0.89	BLV	**<0.001**	**195.1**	**220**
DurL	<0 .001	0.06	0.95	BLV	0.14	307	309
SCS	<0 .001	0.13	1.09	BLV	0.10	3.78	3.45
AgeFSh	<0 .001	0.93	1.01	BLV	0.07	560	534
AgeP	<0 .001	1.00	1.03	BLV	0.23	1556	1506
DO	<0 .001	0.31	1.12	BLV	0.09	112	110
SCh	<0 .001	0.33	1.09	BLV	0.33	1.49	1.36
SC	<0 .001	0.03	1.02	BLV	0.68	1.91	1.87
CI	<0 .001	0.93	1.01	BLV	**0.05**	**387**	**385**

PDNa: adjusted to 305 days milk production (Kg), DurL: duration of lactation (Days), KgPROa: protein in kilograms, KgFa: fat in kilograms, SCS: somatic cell score, AgeFSh: age at first service in heifers, AgeP: age at parturition, DO: days open, SCh: services per conception in heifers, SC: services per conception, CI: calving interval; significant data in bold.

Analysis of association between productive and reproductive variables and seropositivity to BLV, BVD or Nc and the interactions between these pathogens in 599 cows in 53 herds from dairy production regions in Antioquia-Colombia, South America.

Pathogens	Parameters	Odds ratio	p value	Average + cows	Average - cows
DVB	PDNa	0.972	0.166	5190	5700
Nc	SC	1.35	0.006	2.75	1.29
Nc	DurL	0.960	0.142	299	315
BLV	CI	1.03	0.052	387	385
BLV	KgFa	0.884	0.001	195	220
BLV	KgPROa	0.927	0.002	165	180
BLV-BVD	PDNa	0.856	0.124	5119	5570
BLV-BVD	CI	1.01	0.057	391	382
BVD-Nc	%Fa	0.864	0.03	3,4	4,5

PDNa: milk production adjusted to 305 days (Kg), DurL: duration of lactation (Days), KgPROa: protein adjusted to 305 days in kilograms, KgFa: fat adjusted to 305 days in kilograms, SC: services per conception, CI : calving interval.