

Vertical transmission of Bluetongue virus serotype 8

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Vertical transmission in cattle after **experimental** infection

16 multi-parous cows 8-months in gestation

- Free of BTV and BTV-Abs
- 8 were experimentally infected by BTV-8
- Newborn calves
 - were tested by PCR and ELISA
 - were grouped (depending on PCR-results)
 - were fed with colostrum
 - of non-infected cows (free of BTV and BTV-Abs)
 - of infected cows (could contain BTV and/or BTV-Abs)
 - contaminated with blood from the viraemic cows
- Calves were frequently sampled and checked for clinical signs



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Vertical transmission: after **experimental** infection

Mother	PCR	Ab	BVDV (tested on dpi)		t	Calve	born	PCR	Ab	t	PM	remarks			
			from (dpi)	from (dpi)									Ab ELISA	VI	
967	neg	neg	11	7	12	29	983	20-07	neg	neg	1				
Mother A Colostrum A															
968	3	12	11	10	11	4	7	12	22	984	23-jan	neg	65		
970	3-12	12	11	29	11	4	7	12	29	986	27-jan	neg	1		
969	3	12	11	9	29	11	4	7	12	33	988	4-feb	neg	53	low [Ab]
Mother A Col B + bld A															
975	3	12	11	9	30	11	4	7	12	42	991	19-feb	neg	38	
Mother A Colostrum B															
978	3	12	11	28	11	4	7	12	33	987	2-feb	neg	2	calve with red nose	
972	neg	neg	11	18	11	4	7	12	22	985	26-jan	neg	64		
Mother B Colostrum A															
974	neg	neg	11	29	11	4	7	12	36	989	9-feb	neg	48	low [Ab]	
973	neg	neg	11	29	11	4	7	12	36	990	12-feb	neg	46		
Mother B Col B + bld A															
971	neg	neg	11	7	11	4	7	12	9	979	18-jan	neg	70		
971	neg	neg	11	7	11	4	7	12	9	980	18-jan	neg	70		
966	neg	neg	11	12	11	4	7	12	15	981	21-jan	neg	67		
964	neg	neg	11	18	11	4	7	12	22	982	21-jan	neg	67		
965	neg	neg	11	10	24	11	4	7	12	71	992	19-mrt	neg	10	
Mother A	2-15	12	11	22	11	4	7	12	23					calve dead in utero	
Mother B	neg	neg	11	12	11	4	7	12	15					torso uteri secto, calve dead	
excluded															
976														premature delivery	

3 positive (BTV)
neg negative (BTV)
neg remarkable

3 positive (BVDV)
4 negative (BVDV)

A: BTV-infected B: mock infected

CENTRAL VETERINARY INSTITUTE Backx et al., in prep. **GD**

Vertical transmission in cattle after **natural** infection

Selection of cow-calf combinations

- 43 dairy cattle farms
- Calves were born after January 1st, 2008
- Calves were at least 10 days old
- Cows and calves were tested in ELISA and PCR

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Vertical transmission: after **natural** infection

	PCR		ELISA		Cows				TOTAL
	POS	NEG	POS	NEG	POS	NEG	POS	NEG	
Calves	2	0	0	0	0	0	34	1	37
	0	0	0	0	0	0	0	0	0
	6	0	0	0	178	13	13	13	197
	0	0	0	0	9	142	142	142	151
TOTAL	8	0	0	0	221	156	221	156	385

Conclusions

- no acute infections
- > 50% seroprevalence in both cows and calves
- Seropositive calves from seronegative cows
- BTV (PCR) prevalence in newborns higher
- PCR-positive calves delivered by PCR-negative cows

CENTRAL VETERINARY INSTITUTE van Wuijkhuise et al., in prep. **GD**

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In progress/plans

- Unexpected results will be confirmed by genetic relationship
- Longitudinal study on the calves by ELISA and PCR

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