

No adverse effects of vaccination against BTV-8 in Swedish dairy herds

Ulf Emanuelson¹ and Hans Gustafsson^{1,2}

¹Dep't of Clinical Sciences, Swedish University of Agricultural Sciences, Uppsala and ²Swedish Dairy Association, Stockholm, Sweden
ulf.emmanuelson@slu.se

Objective

The objective was to evaluate possible associations between vaccination using inactivated vaccines against bluetongue virus serotype 8 (BTV-8) and health and reproduction of dairy cows under field conditions

Conclusion

Vaccination against BTV-8 did not lead to adverse effects on health and reproduction of dairy cows in Sweden.

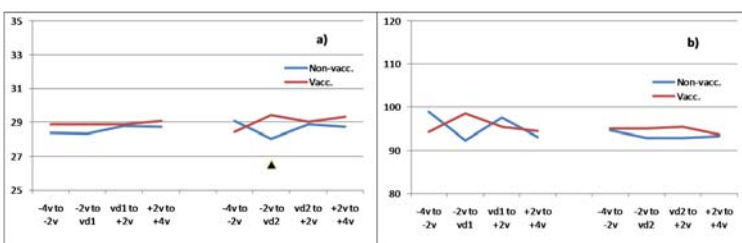
Background

- No clinical disease in Swedish dairy herds, but seropositivity at surveillance of bulk tank milk samples in September 2008
- Regional vaccination campaign with BTVPUR® Alsap 8 (Merial, France) between September 2008 and April 2009, with a second vaccination between July 2009 and April 2010.
- Farmer-reports claiming abortions and stillbirths after vaccination.

Material and methods

- **Material:**
 - Performance data from a geographical area with vaccinated herds and a bordering area where herds were not vaccinated.
 - In total 165,797 cows in 1,562 herds.
 - Vaccination dates were available on herd-level.
- **Methods:**
 - Statistical analyses with generalized estimation equation models with appropriate link functions, simultaneously adjusting for multiple factors.
 - Dependent variables were: daily milk yield and log(SCC), pregnancy chance at first AI, pregnant at 30 days after the herd voluntary waiting period (PV30), calving interval, stillbirth risk.

Results



Least-square means for daily milk yield (a) and SCC (b) according to week of test in relation to 1st (vd1) and 2nd (vd2) vaccination for cows in vaccinated and non-vaccinated herds. Significant differences ($p < 0.05$) are indicated with ▲

Odds ratio (OR) for pregnancy at 1st artificial insemination (AI) and at 30 days after the herd voluntary waiting period (PV30) for cows in vaccinated herds relative to cows in non-vaccinated herds

Week of 1 st AI in relation to 1 st (vd1) and 2 nd (vd2) vaccination	1 st AI		PV30	
	OR	p-value	OR	p-value
-4v to -2v	1.09	0.32	1.00	0.97
-2v to vd1	0.93	0.46	0.89	0.27
vd1 to +2v	1.01	0.91	1.14	0.22
+2v to +4v	0.90	0.25	0.89	0.26
-4v to -2v	0.91	0.44	0.87	0.31
-2v to vd2	1.02	0.91	1.08	0.60
vd2 to +2v	0.86	0.32	0.93	0.69
+2v to +4v	1.08	0.66	1.00	0.97

Least-square means for calving interval for cows in vaccinated and non-vaccinated herds

Week of calving in relation to 1 st (vd1) vaccination [*]	Calving interval		p-value
	Vaccinated	Non-vaccinated	
-4v to -2v	379.6	376.1	0.29
-2v to vd1	374.6	374.8	0.94
vd1 to +2v	374.7	372.5	0.42
+2v to +4v	371.1	370.8	0.91

*Too short observation period to allow evaluation in relation to 2nd vaccination

Odds ratio (OR) for stillbirths for cows in vaccinated herds relative to cows in non-vaccinated herds

Week of calving in relation to 1 st (vd1) and 2 nd (vd2) vaccination	OR	p-värde
-4v to -2v	1.12	0.42
-2v to vd1	1.33	0.04
vd1 to +2v	1.06	0.69
+2v to +4v	0.86	0.28
-4v to -2v	1.03	0.82
-2v to vd2	0.71	0.03
vd2 to +2v	1.02	0.90
+2v to +4v	0.88	0.51