

Immunization with Startvac® in two Swedish herds infected with *Staphylococcus aureus*



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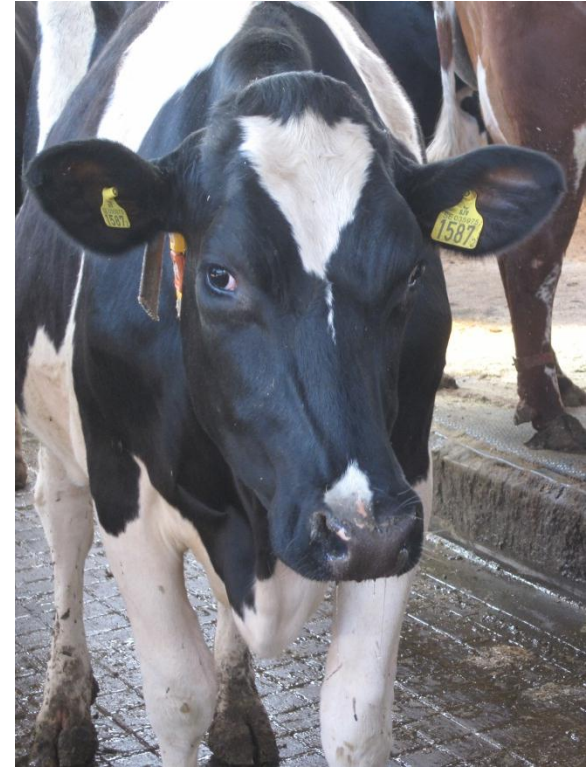
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Outline of talk

- Hypotesis
- Material and methods
- Results

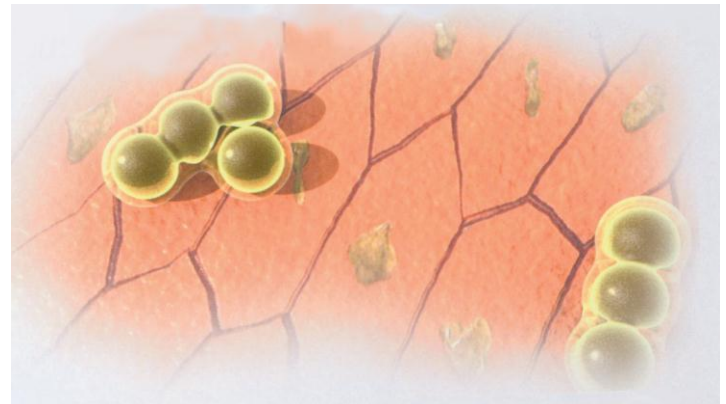
Preliminary conclusion



Hypothesis

Vaccination with Startvac[®]
will give

- Clinical mastitis ↓
- Subclinical mastitis ↓
- Longevity ↑



Picture: Hipra

Study design



- Trial period 12 months
- Cows with odd number were vaccinated with Startvac[®] in accordance to protocol
- Cows with even numbers were used as control group
- Data from 12 months before and after trial period retrieved from national database
- Evaluation on SCC, mastitis and bacterial findings during first 4 months after calving
- Culturing at NVI mastitis laboratorium for clinical and subclinical mastitis

The two herds

Herd A

- 315 SRB cows
- 10 500 kg ECM
- 32 pl. carousel parlor
- BTSCC 150 000
- Selective DCT
- Monthly DHI testing
- 277 cows in trial

Herd B

- 615 SLB cows
- 12 000 kg ECM
- 2x12 plll parlor
- BTSCC 280 000
- Selective DCT
- Monthly DHI testing
- 479 cows in trial

Vaccination protocol



STARTVAC® vaccinationsprogram

Anm: The first immunisation at 50-60 days antepartum in herd B

Bacterial Culturing at NVI

- CM and SCM
SCC > 150 000
- Total 1294 samples
- All results in
Sw. Dairy database
 - 37 % S a; 16 % CNS;
 - 5 % E. c.; 20 % sr
- *S. aureus* correlation
to herd an cow-group

Group	Bacteria
S. aureus pc+	Staphylococcus aureus, pc +
S. aureus pc-	Staphylococcus aureus, pc -
CNS	coagulasnegative staphylococci, pc+ coagulasnegative staphylococci, pc- coagulaspositive staphylococci
E. coli and Coliforms	Escherichia coli Klebsiella oxytoca Serratia species
Streptococci	Streptococcus dysgalactiae Streptococcus species Streptococcus uberis

Bacterial Culturing at NVI

Herd A	Vaccinated		Control		p-value
	All	Infected %	All	Infected %	
1st lactation	37	1 (2,7)	64	4 (6,3)	0,43
>1st lactation	92	8 (8,7)	91	15 (16,5)	0,11
All	129	9 (7,0)	155	19 (12,3)	0,14

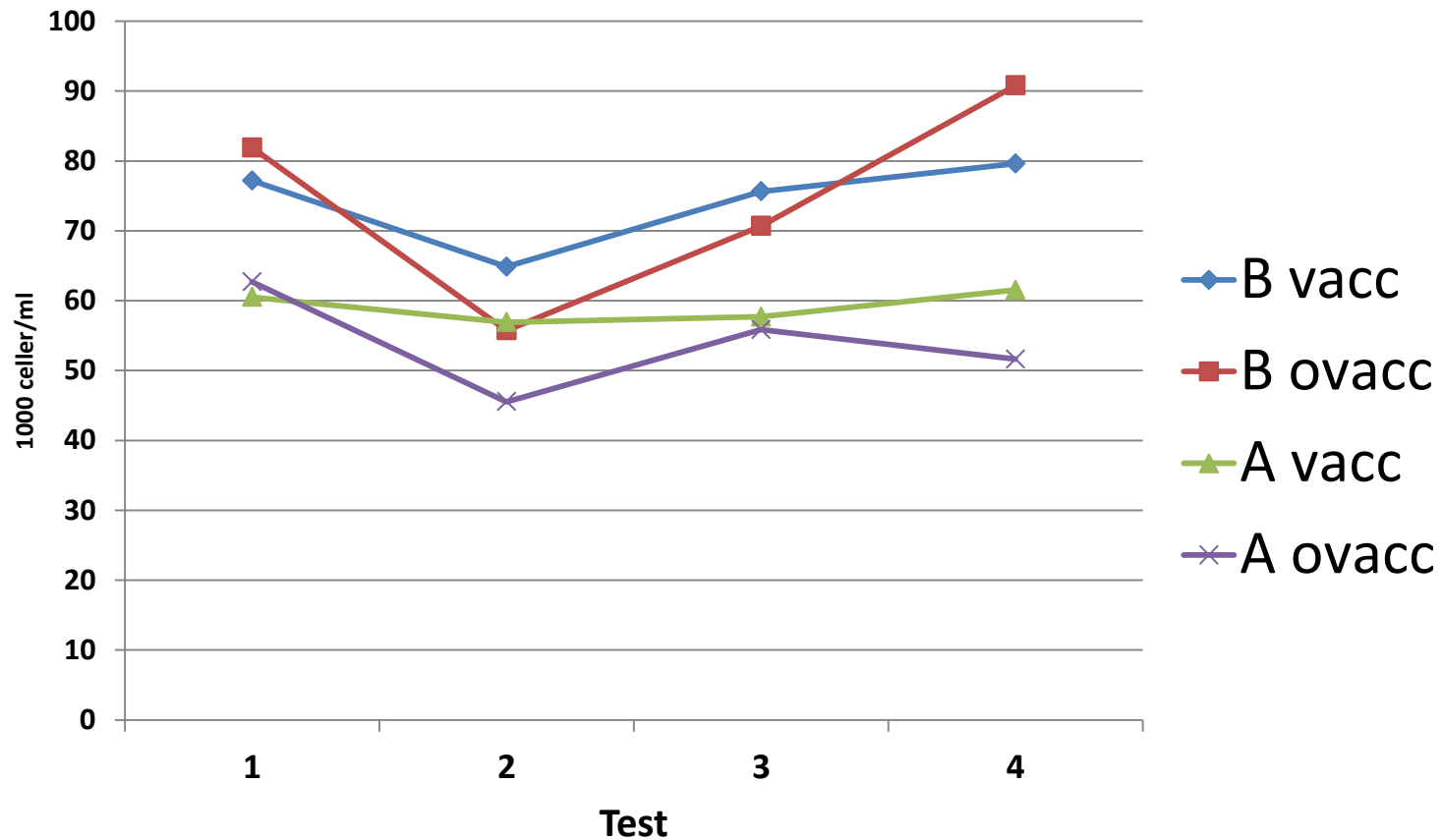
Herd B	Vaccinated		Control		p-value
	All	Infected %	All	Infected %	
1st lactation	115	10 (8,7)	105	5 (4,8)	0,25
>1st lactation	130	28 (21,5)	135	21 (15,6)	0,21
All	245	38 (15,5)	240	26 (10,8)	0,13

Cows > 200 000 SCC

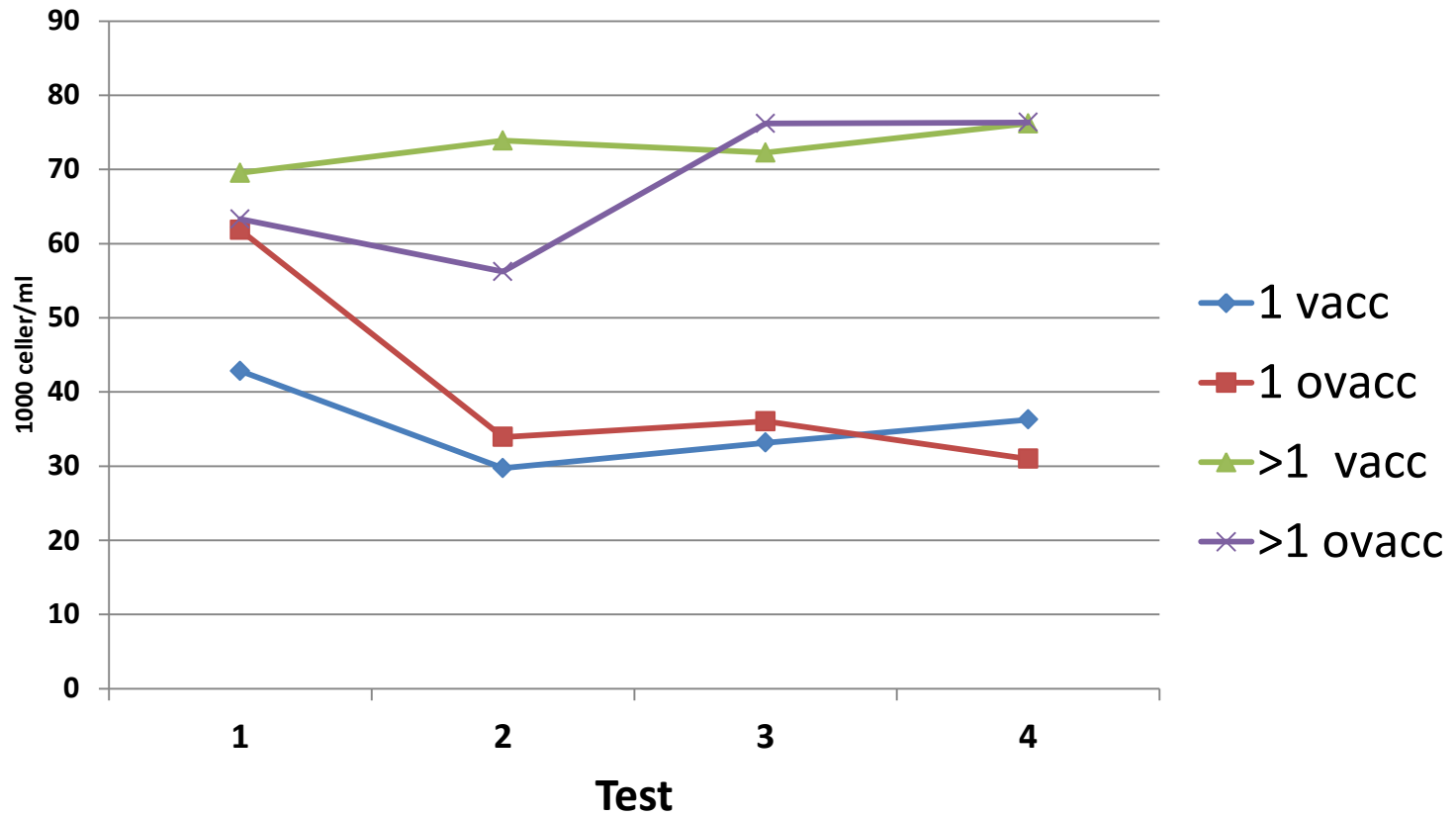
Herd A		Test 1		Test 2		Test 3		Test 4	
Lactation		vacc	control	vacc	control	vacc	control	vacc	control
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
1		1 (2,7)	8 (12,7)	1 (2,7)	6 (9,5)	2 (5,4)	5 (8,2)	4 (11,1)	1 (1,6) (*)
>1		20 (21,7)	18 (20,2)	26 (28,3)	15 (17,1) (*)	18 (19,8)	27 (31,4) (*)	18 (20,2)	20 (24,7)
All		21 (16,3)	26 (17,1)	27 (20,9)	21 (13,9)	20 (15,6)	32 (21,8)	22 (17,6)	21 (14,7)

Herd B		Test 1		Test 2		Test 3		Test 4	
Lactation		vacc	control	vacc	control	vacc	control	vacc	control
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
1		21 (18,8)	21 (21,4)	13 (11,8)	10 (10,2)	14 (12,8)	14 (14,3)	19 (17,6)	14 (14,7)
>1		26 (20,8)	21 (16,4)	29 (23,4)	27 (21,4)	34 (27,9)	33 (27,5)	32 (27,4)	42 (35,6)
All		47 (19,8)	42 (18,6)	42 (18,0)	37 (16,5)	48 (20,8)	47 (21,6)	51 (22,7)	56 (26,3)

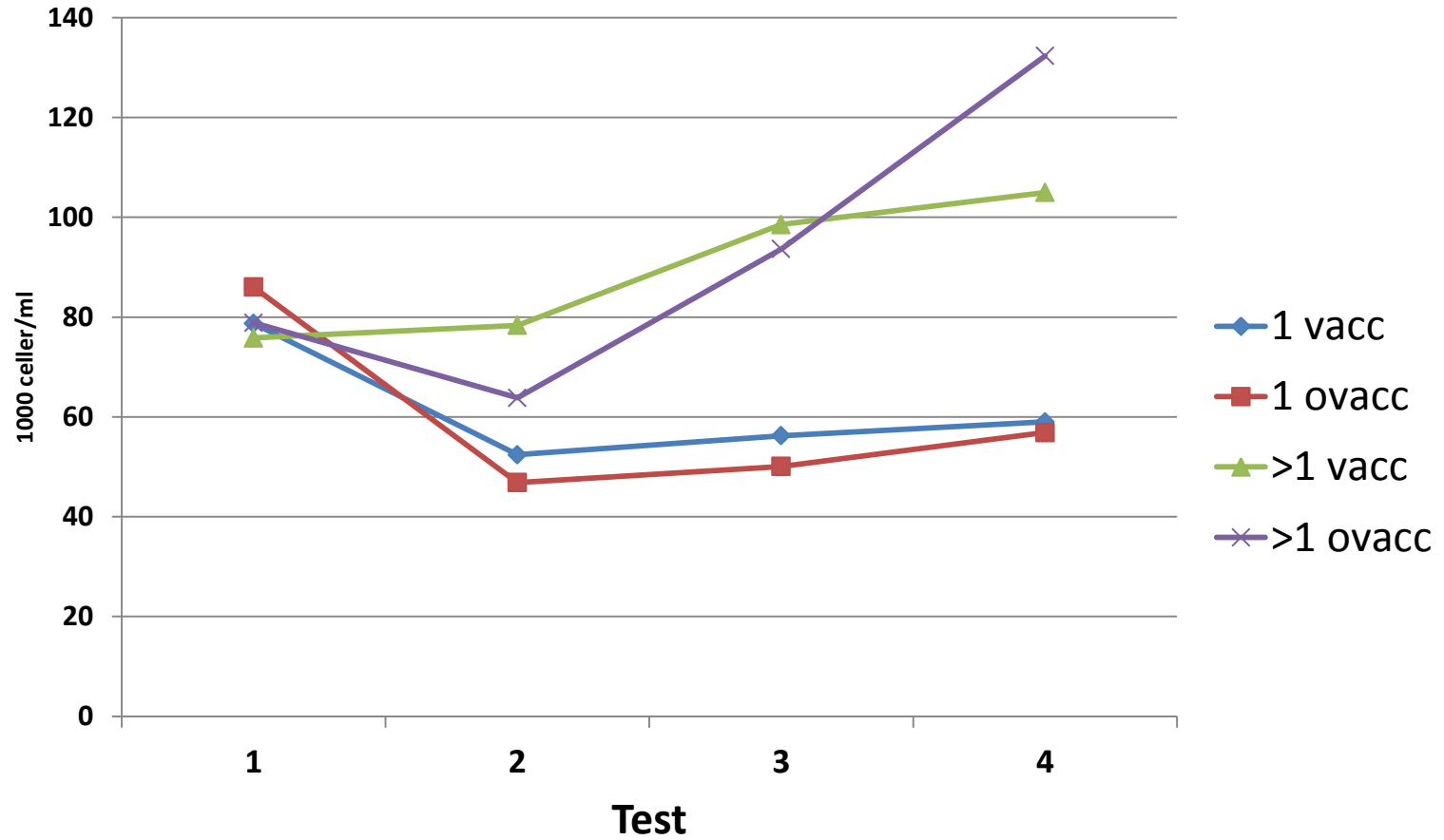
All Cows in trial vs. Herd & SCC



Cows in herd A vs. SCC



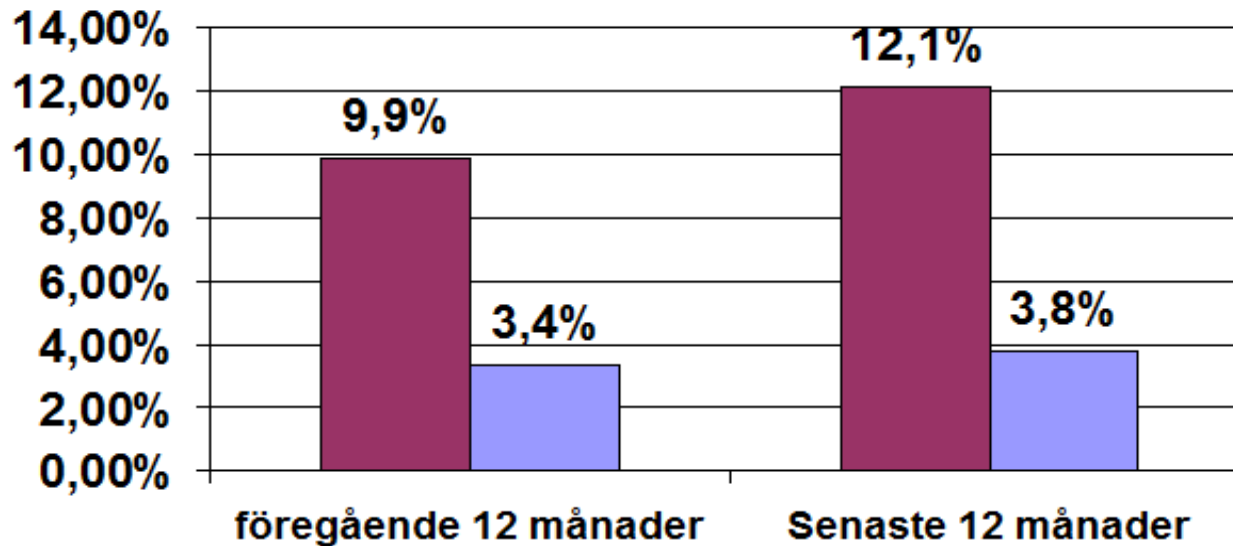
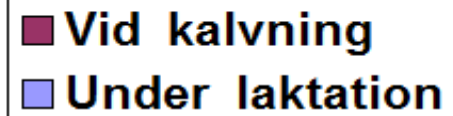
Cows in Herd B vs. SCC



New infections herd A

Time interval: 20100630-20120631

Nyinfektion kor per 12 månadersperiod

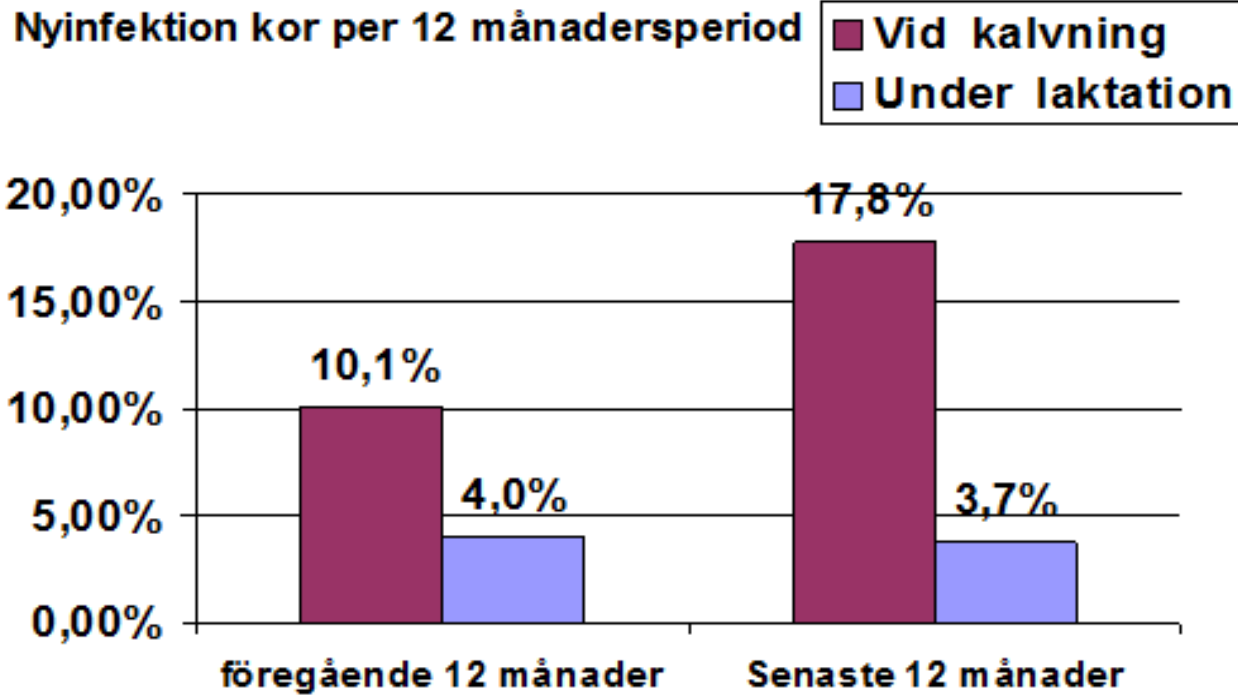


Villkor flerkalvare Okorrigerat celltal: 200

Villkor kvigor Okorrigerat celltal: 200

New infections herd B

Time interval: 20100630-20120631



Villkor flerkalvare Okorrigerat celltal: 200

Villkor tvårigor Okorrigerat celltal: 200

Preliminary conclusions

In these two herds so far

- No effect on clinical mastitis
- No effect on subclinical mastitis
- No effect on new infection rate on herd level
- No effect on BTSCC



Still to be done

Calculate

- New Infection Rate on cow level
- Longevity
- Cost benefit analysis

Evaluate effect of

- yield, DIM,
- Age and breed
- Historical SCC

