

Staph aureus Mastitis Control

Key Points

Study Concludes LYSIGIN® Bacterin Enhances Spontaneous Cure Rates

- Vaccinates had 62% spontaneous cure rate of clinical and subclinical *Staph aureus* during lactation.
- Researcher concluded LYSIGIN® bacterin enhances a cow's natural defense mechanisms and facilitates the elimination of *Staph aureus* infections.

Study Design

Investigator	Dr. J.W. Pankey, LSU researcher at time of study.
Test animals	244 first/second lactation heifers; 150 second/third lactation cows. Initially all animals were balanced in bacteriological status of udder quarters.
Cows First lactation	Vaccination occurred at drying off, 14 days later, mid-lactation, second drying off.
Heifers First lactation	Vaccination occurred two months prior to freshening, 14 days later, mid-lactation, first drying off.
Cows & heifers Second lactation	Vaccination at mid-lactation and at drying off.

Treatment Groups

Heifers	141 heifers were vaccinated; 103 were unvaccinated controls.
Cows	74 cows were vaccinated; 76 were unvaccinated controls.

Sample Collection

Bacteriological culture	Milk samples were taken, cultured, microorganisms identified from each quarter four times per lactation.
Somatic cell count (SCC)	SCC on all samples determined at least three times per lactation.

Results Over Two Lactations

Heifers

Lactation	Treatment	# of Head	# of Quarters	Quarter Infections	Spontaneous Cures
1	Vaccinates	71	282	8%	68%
	Control	52	206	3%	14%
2	Vaccinates	70	257	5%	64%
	Control	51	197	6%	0%

Cows

Lactation	Treatment	# of Head	# of Quarters	Quarter Infections	Spontaneous Cures
2	Vaccinates	37	148	3%	50%
	Control	41	162	7%	45%
3	Vaccinates	37	143	8%	50%
	Control	35	131	4%	20%

Combined Results

Treatment	# of Head	# of Quarters	Quarter Infections n/%	Spontaneous Cures n/%
Vaccinates	215	830	52/6%	32/62%
Control	179	696	34/5%	7/21%

Summary of Results

The incidence of intramammary *Staph aureus* infections were similar in vaccinates and controls. The spontaneous cure percentages during lactation were 62% for vaccinates and 21% for controls.

The Bottom Line

- Dr. Pankey concluded **LYSIGIN**[®] bacterin enhances a cow's natural defense mechanisms.
- **LYSIGIN** bacterin facilitates the elimination of subclinal *Staph aureus* mastitis according to Dr. Pankey.
- A 41% improvement in vaccinates equated to a reduction in antibiotic treatment and culls due to *Staph aureus*.

Definition of Terms

Intramammary infection (IMI)	1) Duplicate of consecutive samples yielding <i>Staph aureus</i> 2) <i>Staph aureus</i> isolated from case of clinical mastitis 3) <i>Staph aureus</i> isolated from single milk sample with corresponding increase in SCC
Subclinical mastitis infection	<i>Staph aureus</i> present in udder with no accompanying clinical signs
<i>Staph aureus</i> cure	Absence of <i>Staph aureus</i> on all subsequent milk samples until the end of a lactation
Spontaneous cure rate	Percentage rate of individual cows or heifers moving from infected to cure status during lactation with no treatment