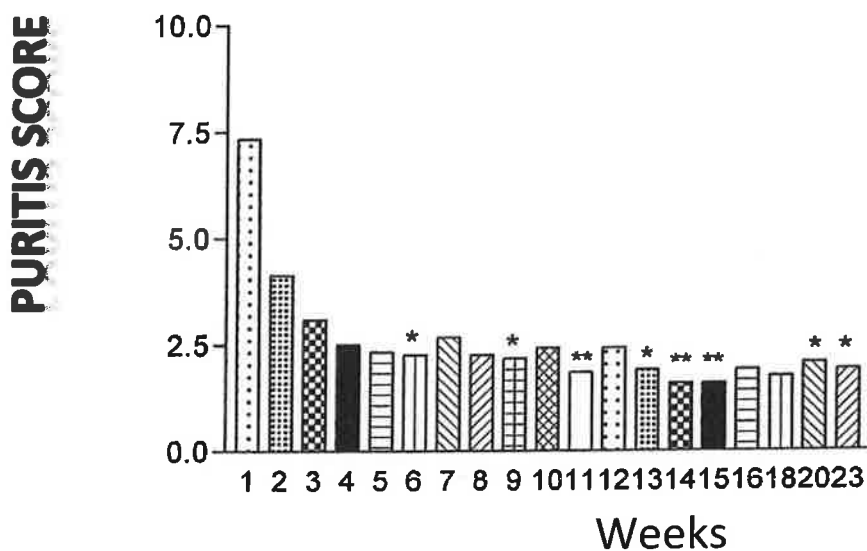


Recurrent staphylococcal infections are frequent in dogs with atopic dermatitis. Several factors such as decrease of epidermal barrier function, decrease in production of antimicrobial peptides and increased colonization and adherence of bacteria to keratinocytes seem to combine to make bacterial pyoderma refractory to treatment. Systemic antibiotic therapy in the short-term is effective for the treatment of episodes and with pulse therapy, might contribute to long-term control. However, in addition to undesirable side-effects, microbial resistance has become a growing and alarming problem.

The aim of this study was to evaluate whether the use of *Staphylococcus aureus* Phage Lysate Staphage Lysate (SPL)[®], a bacterin obtained from *S. aureus*, used in vaccine protocol can minimize the symptoms of recurrent pyoderma and increase the interval between episodes in atopic dogs. Twelve dogs with a history of recurrent bacterial pyoderma received SPL[®] at increasing intervals for twenty three weeks. An efficacy rate of 83.33% for the control of pruritis and regression of lesions was observed.



*P<0.05
**P<0.01

Average Pruritis scores of study dogs from week 1 to 23.

Scoring Method Used: Rybnicek, J., Lau-Gillard, P.J., Harvey, R. and Hill, P.B. (2009). *Further validation of a pruritus severity scale for use in dogs*. *Veterinary Dermatology*, 20:115-122. doi:1111/j.1365-3164.2008.00728.x

Identification and culture ID of the dogs 1 to 13.

Breed	Sex	Age (Years)	Culture ID
1-Yorkshire Terrier	M	5	<i>S. pseudintermedius</i>
2- Dachshund	F	6	<i>S. aureus</i>
3-Golden Retriever	F	2	<i>S. pseudintermedius</i>
4-Poodle	M	7	<i>S. pseudintermedius</i>
5-Golden Retriever	F	6	<i>S. aureus</i>
6-Maltese	F	6	<i>S. pseudintermedius</i>
7-Lhasa Apso	F	6	<i>S. aureus</i>
8-Mixed Breed	F	5	<i>S. pseudintermedius</i>
9-Yorkshire Terrier	M	4	MRSP
10-Shitzu	F	3	MRSP
11-- Dachshund	F	5	<i>S. pseudintermedius</i>
12- English Bulldog	F	3	MRSA
13-Dachshund	F	9	MRSA

MRSP-Methicillin Resistant *Staphylococcus pseudintermedius*

MRSA-Methicillin Resistant *Staphylococcus aureus*

Antibiotic Sensitivity of Cultures from Atopic Dogs 1 to 13

Dogs	1	2	3	4	5	6	7	8*	9	10	11	12	13
Amoxicillin & Clavulanic Acid	S	S	S	S	S	S	S	S	R	I	S	S	R
Cefovecin Sodium	R	S	S	S	S	S	S	S	R	R	S	R	R
Cefixime	R	S	S	S	S	S	S	S	R	R	S	R	R
Enrofloxacin	S	S	S	S	S	R	S	S	R	R	S	R	R
Ciproflaxin	I	S	S	S	S	R	S	S	R	R	S	R	R
Clindamycin	S	R	S	S	I	R	S	S	I	I	R	S	R
Azithromycin	S	R	S	S	I	R	S	S	R	I	S	S	R
Marboflaxacin	S	S	S	S	S	R	S	S	S	R	S	R	R
Oxacillin	I	S	S	S	S	I	S	S	R	R	S	R	R

S-Sensitive I-Intermediate R-Resistant

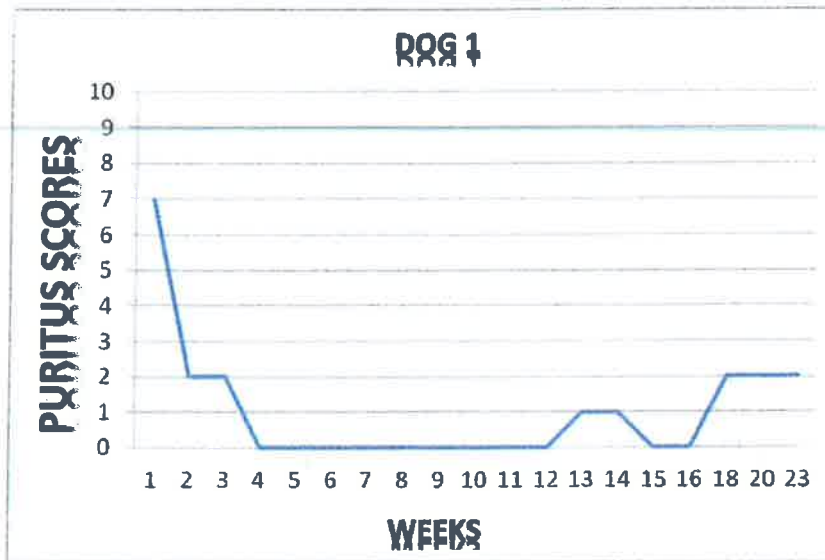
*Dog did not complete study

Antibiotic therapy was based on the results of the culture and sensitivity tests
(See previous table)

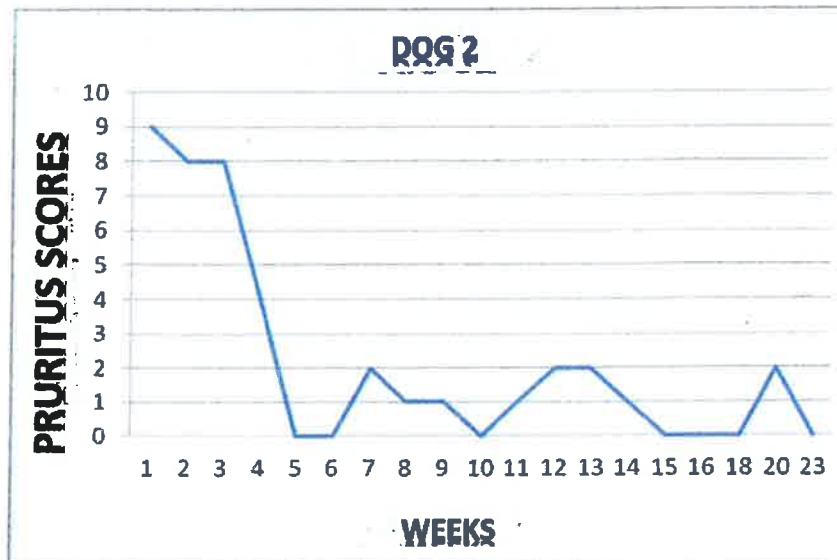
Dog	Antibiotic	Dose, Frequency,Route of Admin	Weeks
1	Cefovecin Sodium	8 mg/kg each 14 days/SC	1 and 3
2	Amoxicillin & Clavulanic Acid	22 mg/kg BID/oral	1 to 4; 7 and 8
3	Cephalexin	30 mg/kg BID/oral	1 to 4; 7 and 8
4	Cefovecin Sodium	8 mg/kg each 14 days/SC	1 and 4
5	Cephalexin	30 mg/kg BID/oral	1 to 3
6	Cephalexin	30 mg/kg BID/oral	1 to 3
7	Cephalexin	30 mg/kg BID/oral	1 to 4
	Amoxicillin & Clavulanic Acid	22 mg/kg BID/oral	12 to 16 and 20
9	Cefovecin Sodium	8 mg/kg each 14 days/SC	1 and 3
10	Amoxicillin & Clavulanic Acid	22 mg/kg BID/oral	1 and 3
11	Cefovecin Sodium	8 mg/kg each 14 days/SC	1 and 3
12	Amoxicillin & Clavulanic Acid	22 mg/kg BID/oral	1 to 4
13	Enrofloxacin	5 mg/kg BID/oral	1 and 2
	Clindamycin	10 mg/kg BID/oral	3 and 4
	Amikacin	Spray 3% BID/topical	5 to 8

Antibiotics Administered to Dogs 1 to 13

Examples of Pruritus Scores in Two Dogs



Pruritus Score Dog 1 (Male Yorkshire Terrier-Age5) with *S. pseudintermedius*
Weeks 1 to 23



Pruritus Score Dog 2 (Female Dachshund –Age 6) with *S. aureus*
Weeks 1 to 23

Control of Pyoderma Lesions with Staphage Lysate (SPL)[®]



Figure 4: A- Week 1: Presence of papules, epidermal collarettes, melicéricas (honey-like crusts), erythema and hyperpigmentation on ventral abdomen; B- Week 23: remission of lesions.



Figure 5: A- Week 1: presence of hypotrichosis, alopecia, tonsure and epidermal collarettes in lateral abdominal region and external side of thigh, secondary staphylococcus folliculitis; B- Week 23: remission of lesions

Photographs courtesy of Dr. Suzana Evelyn Bahr Solomon from her thesis *Staphylococcus aureus phage Lysate (SPL)[®] use for control of recurrent eczematizing pyoderma of dogs with atopic dermatitis*

Evaluation of the Efficacy in the Control of Lesions

Dermatological lesions were evaluated weekly and a numerical scale of lesions was carried out in three phases: 1, 2, and 3 (in weeks 1, 12, and 23), based on the dermatological evaluations. The total score for the week was obtained by the sum of individual scores of each lesion in specific locations (head, ears, trunk, axilla, abdomen, perineum, limbs and feet). The lesion score ranged from 0 to 3, where 0=without lesions; 1 = a few lesions, 2 = many distinct lesions, 3 = many confluent lesions. The efficacy was verified by using the Fisher test relative to 77%, the proven efficacy of SPL.

Statistical Evaluation

For the statistical analysis of the nonparametric data, Kruskal-Wallis test was used, followed by Dunn's test for comparison of the averages. The significance level used was 5% ($\alpha=0.05$) since levels of $p \leq 0.05$ were considered significant. All calculations were performed using the statistical *Software GraphPad Prism* version 3.00 for Windows, San Diego, California, USA.

DOSAGE SCHEDULE FOR TREATING CANINE PYODERMA

Dosage Schedule 1: Bi-Weekly

Nonallergic Patients

(as used in our clinical study)

Skin Test: Not required

All injections given subcutaneously

0.5 mL twice (2) weekly for 16 weeks

After either protocol, it is frequently necessary to give the dog monthly booster shots of 1.0mL to prevent recurrence of

Dosage Schedule II: Weekly

Allergic Patients

(as used by many veterinarians)

Skin Test: 0:05 to 0.1 mL intradermally

All injections given subcutaneously

Week 1	0.2 mL	Week 4	0.8 mL
Week 2	0.4 mL	Week 5	1.0 mL
Week 3	0.6 mL	Weeks 6-12	1.0 mL

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- e-mail splvet@delmont.com or
- Order from your distributor.

If you need to reach us during non-business hours, you can leave a message and Customer Service will return your call as soon as possible.

TECHNICAL SUPPORT

For product Information & Client Brochures

- Call Customer Service at 800-562-5541
- Visit our at Website www.delmontlabs.com

For Clinical Questions

Call Dr. Pat Breen, DVM, Diplomate ACVD
at 888-417-9379

You can call Dr. Breen, board certified veterinary dermatologist at *no charge* to benefit from his expertise in the use of SPL. His goal as well ours, is to do everything we can to help you achieve successful treatment of your pyoderma cases with SPL.