



NEW APPROACH TO BOOST PYO LINE'S SALES

Name: Océane RICHARD

Date : 07/25

- **Skin infections** are **common causes** for veterinary dermatological consultations
- **Skin infections** can be caused by **different pathogens** : bacteria, fungal including yeast
- Bacterial skin infections are **one of the main reasons** for **antimicrobial use** in dogs and cats ¹

❖ **Pyoderma = 25% of canine dermatological consultations** ²

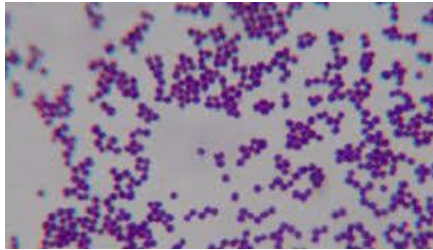
→ *Staphylococcus pseudintermedius* +++

❖ **Malassezia dermatitis**

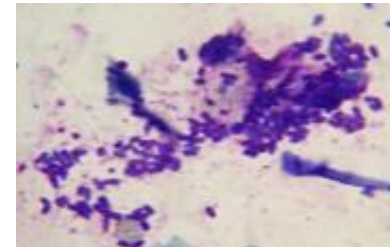
→ Predisposed breeds: Basset Hound, Westie, Labrador Retriever, German Shepherd

❖ **Underlying causes:**

- Relapses if the triggering factor is not treated
- Atopic dermatitis, other allergic dermatitises, hypocorticism, immunodepression
- Allergies = causes of relapses in 59% of skin infections ³



Staphylococcus pseudintermedius



Malassezia pachydermatis

Coprevalence of skin infections and allergies

Veterinary Dermatology

A prospective study on the clinical features of chronic canine atopic dermatitis and its diagnosis

Claude Favrot, Jean Steffan, Wolfgang Seewald, Federicca Picco

First published: 28 January 2010 | <https://doi.org/10.1111/j.1365-3164.2009.00758.x>

- ❖ **66% of atopic dogs** had a recurrent secondary **cutaneous bacterial infection**.⁴
- ❖ **33% of atopic dogs** had a secondary **fungal infection**.⁴
- ❖ **50% of atopic dogs** had **otitis externa**.⁴



- **Several types of pyodermas exist :**
 - * Surface pyoderma
 - * Superficial pyoderma
 - * Deep pyoderma



- In more than **90%** of pyoderma cases in dogs, *Staphylococcus pseudintermedius* is isolated ²
- **Over 80%** of staphylococcal strains are resistant to penicillin G, and the frequency of methicillin-resistant strains has increased.⁵

Antimicrobial resistance : a real public health challenge



Remains **1 of the 10** major **threats** to humanity ⁶



In 2019, it was **responsible for 1,27 million deaths** and could lead to **up to 10 millions deaths per year by 2050**⁷

Inappropriate use of systemic antibiotics in both human and veterinary medicine



Guidelines on the proper use of antimicrobials in case of skin infections, written by veterinary scientific committees (**WAVD & ISCAID**) have multiplied

Focus on the different guidelines

2014⁸

Veterinary Dermatology

Vet Dermatol 2014; **25**: 163–e43

DOI: 10.1111/Ade.12118

Guidelines for the diagnosis and antimicrobial therapy of canine superficial bacterial folliculitis (Antimicrobial Guidelines Working Group of the International Society for Companion Animal Infectious Diseases)

2017⁹

Veterinary Dermatology

Check for updates



Vet Dermatol 2017; **28**: 304–e69

DOI: 10.1111/Ade.12444

Recommendations for approaches to meticillin-resistant staphylococcal infections of small animals: diagnosis, therapeutic considerations and preventative measures.

Clinical Consensus Guidelines of the World Association for Veterinary Dermatology

Daniel O. Morris*, Anette Loeffler†, Meghan F. Davis‡, Luca Guardabassi§ and J. Scott Weese¶



NEW

2025¹⁰



GUIDELINES

Veterinary Dermatology



Antimicrobial use guidelines for canine pyoderma by the International Society for Companion Animal Infectious Diseases (ISCAID)

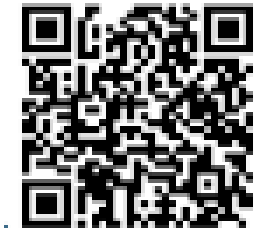
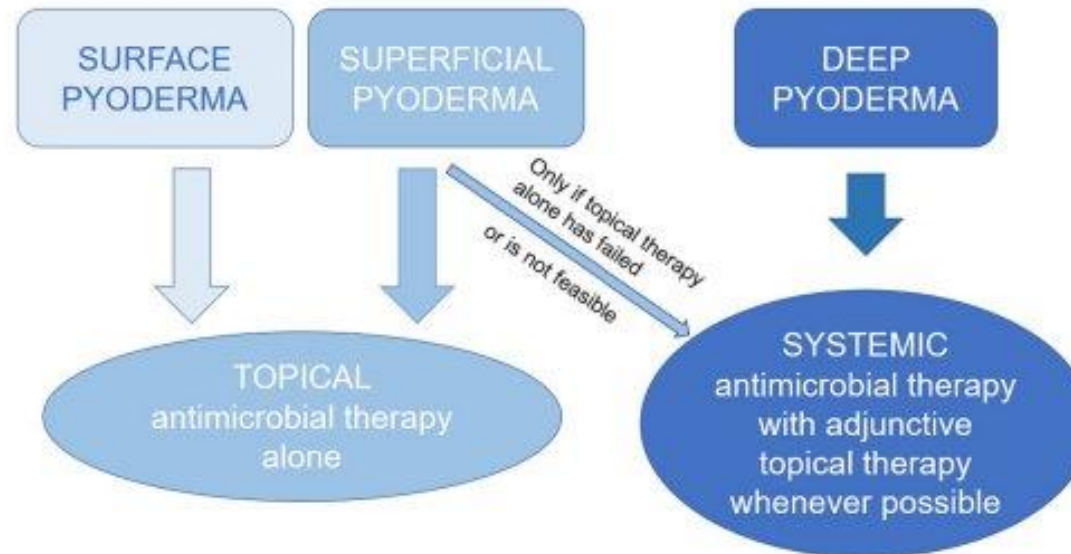
Anette Loeffler¹ | Christine L. Cain² | Lluís Ferrer³ | Koji Nishifuji⁴ | Katarina Varjonen⁵ | Mark G. Papich⁶ | Luca Guardabassi⁷ | Siân M. Frosini¹ | Emi N. Barker⁸ | J. Scott Weese⁹

Topical therapy is KEY for managing skin infections like pyodermas

- **2025 guidelines** indicate :

Topical therapy used as sole antimicrobial treatment is **the treatment-of-choice** for all cases of **surface and superficial pyoderma** and also should be considered as **adjunct therapy** in all cases of **pyoderma** that require systemic treatment

Guidelines 2025



Topical therapy is KEY for managing skin infections like pyodermas

- Topical treatment offers many advantages :

Reduces the need for systemic antimicrobials and limits their impact on the gut microbiota

Effective in the treatment of **superficial** and **surface pyoderma**

Used as adjuvant therapy, it **can reduce the duration of systemic treatment!**

Effective against **staphylococci** that are **sensitive** or **resistant to methicillin**

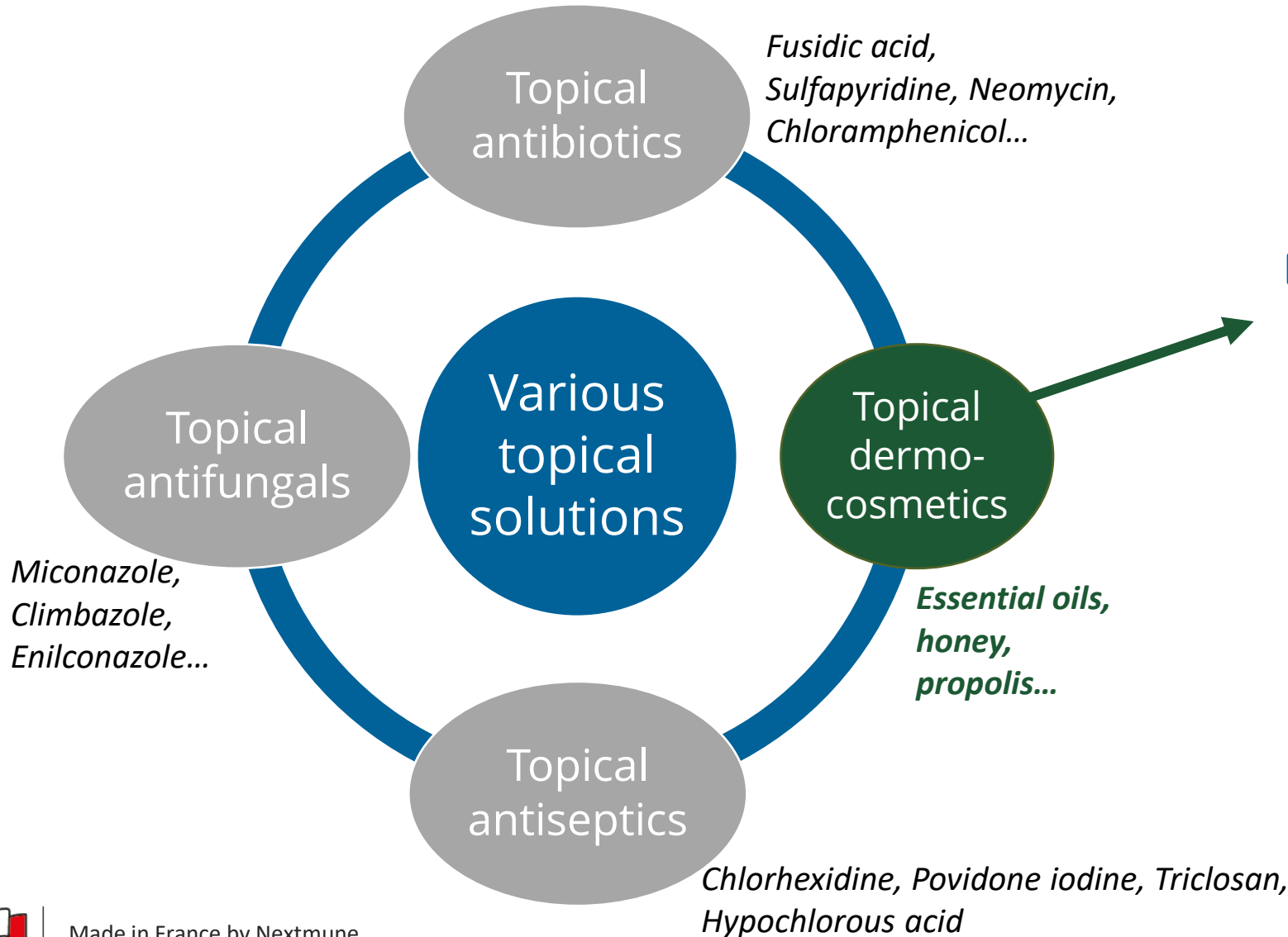
Low risk of inducing **antimicrobial resistance**

Safe, generally well tolerated, and suitable for a **long-term use**

Often **cost effective**

Improves hygiene and skin condition.

Various topical solutions exist



Dermoscent[®] offers the **PYO line** designed to help manage skin infections and combat antimicrobial resistance



Essential Oils

- They offer **interesting perspectives** thanks to their **multiple biological properties**, demonstrated in the literature, such as ¹¹ :

- * anti-inflammatory,
- * sedative,
- * digestive,
- * **antimicrobial**,
- * antiviral,
- * antioxidant effects

- They should be part of the veterinarian's arsenal for **managing skin infections**

« Phyto-aromatherapy [...] opens a **new way, without toxicity, without environmental impact and without harmful side effects** » ¹²

To help manage skin infections





**Hygiene
is ESSENTIAL**

Bathing, regardless of the product used, is **beneficial** because of its **mechanical action**.
It **cleanses** the skin and **removes** dandruff and crusts. ²

PYOclean® Shampoo



PYOclean® Mousse



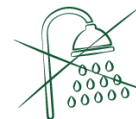


Hygiene is ESSENTIAL



PYOclean® Shampoo

Purifying & hydrating shampoo



PYOclean® Mousse

Rinse-free purifying foam



A mild yet effective formula which does not irritate nor dehydrate the skin



200 ml

Once to twice a week

100% NATURAL ACTIVE INGREDIENTS

- Green apple of lipoamino acids
- Oregano & manuka essential oils
- Propolis
- Honey
- Hemp seed oil: rich in EFA



Antibiofilm

Easy to use: rinse-free

Helps extend the time between shampoos



150 ml

As often as needed

100% NATURAL ACTIVE INGREDIENTS

- Green apple of lipoamino acids
- Saponaria root & lichen extracts
- **N-acetylcysteine**
- Propolis & honey
- Manuka & lavandin essential oils
- Glycerin from vegetable origin
- Hemp seed oil: rich in EFA

PYOclean® Shampoo; Mousse ; Spray

Purifying solutions

SCIENTIFIC EVIDENCE

Efficacy of proprietary formulations containing essential oils and plant extracts compared to chlorhexidine plus miconazole shampoo in canine superficial pyoderma,

C. Romero, G. Sheinberg, A. M. Cordero, R. Heredia

Poster WCVD 2020, Abstract Veterinary Dermatology, October 2020

Protocol

- 30 dogs with superficial pyoderma assigned to 3 groups:

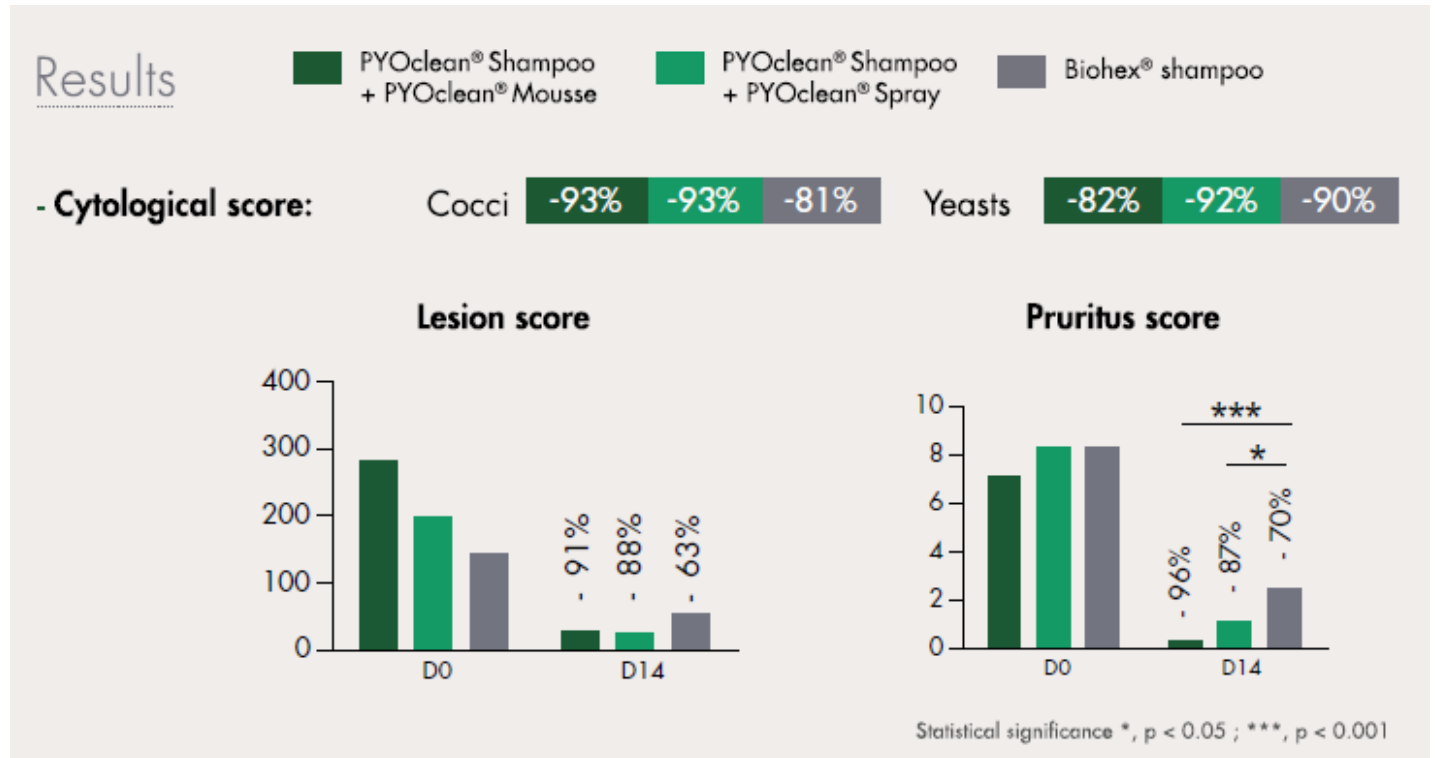
Group 1: **PYOclean® Shampoo** twice a week & **PYOclean® Mousse** once a day

Group 2: **PYOclean® Shampoo** twice a week & **PYOclean® Spray** once a day

Group 3: Medical shampoo containing chlorhexidine, miconazole and microsilver (Biohex® Vetbiotek, USA) twice a week

- Duration: 14 days

- Evaluation criteria: cytological, lesion and pruritus scores





INDICATION

Prevention and adjuvant solution for generalized **pyoderma** and **Malassezia dermatitis**

- Helps rebalance the skin flora
- « 3 in 1 » action: purifying, soothing and hydrating
- **Helps prevent relapses**



QUICK & EASY APPLICATION FOR OPTIMAL COMPLIANCE

1 pipette per week as long as necessary



4 pipettes

100% NATURAL ACTIVE INGREDIENTS

Soothing active ingredients

Lavandin & lemon eucalyptus
essential oils
Tamanu oil

Purifying active ingredients

Neem and ajowan extracts
Palmarosa & savory essential oils

Repairing active ingredients

Hemp seed oil & Tamanu oil : rich in
EFA



SCIENTIFIC EVIDENCE

Topical application of a proprietary blend of essential oils and plant extracts (PYOspot®) is associated with fewer relapses of pyoderma

V. Fadok, F. Seckerdiek, E. Bensignor, C. Noli, A. Oliveira, R. Mueller Article in Poster WCVD 2020, Abstract *Veterinary Dermatology*, October 2020

Aim of the study

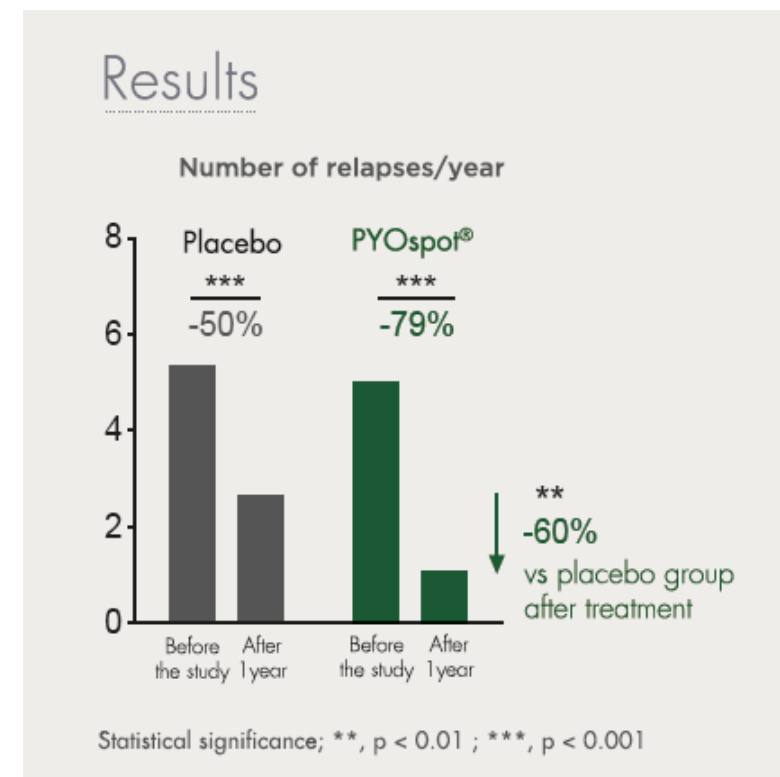
- Evaluate the effect of a weekly topical care **PYOspot®**, on reducing the frequency of pyoderma relapse.

Conclusion :

Regular, long-term use of **PYOspot®** as an adjunct to treatment of the underlying pathology **helps significantly reduce episodes of pyoderma relapse.**

Protocol

- 26 dogs with at least 4 episodes of pyoderma per year
- 1 weekly application of **PYOspot®** or placebo
- Follow-up of the number of relapses for 1 year





Localized areas

In case of **localized pyodermas**, « sprays and lotions are interesting ». ²



INDICATION

Localized skin infections: **pyoderma and Malassezia dermatitis, chin acne, etc.**

Helps:

- Purify & rebalance the skin flora
- Limit the formation of biofilm & disrupt mature biofilm
- Hydrate and soothe the skin

Unique antimicrobial and antibiofilm action

Strengthens the skin's natural defenses thanks to a prebiotic

Helps limit the use of antibiotics

Once to twice a day as soon as the 1st clinical signs appear

Superficial cases: as a unique treatment

Severe cases: as an adjunctive care along with usual medication (antimicrobials, antifungals, etc.)



50 ml

Made in France by Nextmune

PYOclean[®] Spray

Purifying spray



PYOclean[®] Spray

Purifying spray



Purifying & antibiogram active ingredients

N-acétylcystéine
Manuka & lavandin essential oils



Rebalancing active ingredient

Patented Prébiotique oligosaccharidiques

Repairing and soothing active ingredients

Hemp seed oil, rich in EFA
Allantoin

SCIENTIFIC EVIDENCE

A split-body, randomized, blinded study to evaluate the efficacy of a topical spray composed of essential oils and essential fatty acids from plant extracts with antimicrobial properties

E. Bensignor, L. Fabriès, L. Bailleux

Article *Veterinary Dermatology*, December 2016 & Poster WCVD 2016

Conclusion :

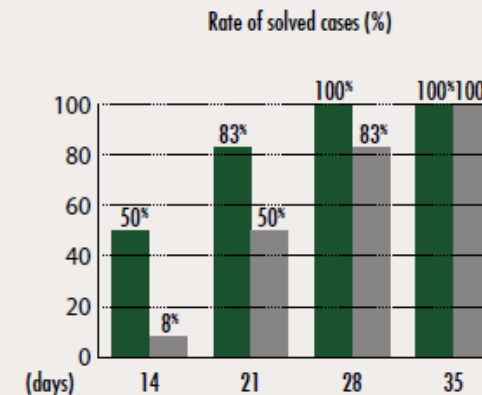
These results show that the use of **PYOclean[®] spray** can **help improve the speed** of resolution of superficial pyoderma **and could shorten the duration of antimicrobial treatments.**

Protocol

- **12 dogs** with a superficial pyoderma
- Systemic treatment: **cefalexin** (15 mg/kg twice a day) in association with **PYOclean[®] Spray** on half of the body and a **placebo** spray on the other half
- Duration: **4 weeks**
- Follow-up of case resolution on D14, D21, D28 et D35

Results

- Placebo + Cefalexin
- PYOclean[®] Spray + Cefalexin



Hind limbs
after 14 days:

PYOclean[®] Spray



Placebo





Otitis externa

Otitis externa is an inflammatory disease of the external auditory canal and **can be complicated by bacteria or yeast.**



PYOclean[®] Oto

Purifying & soothing ear cleanser


PYOclean Oto[®] : Purifying & soothing ear cleanser

INDICATION

- Prevention of recurrent erythematous-ceruminous otitis (ECO)
- Complementary care for treatment of otitis externa

Helps:

- Cleanse & deodorize
- Purify thanks to antimicrobial and antibiofilm active ingredients
- Limit the proliferation of pathogens & rebalances skin flora
- Soothe the ear canal

 Hygienic and practical single-dose format

ECO: once a day prior to the medical treatment

Maintenance to avoid relapses: once a week for one month and then once every two weeks as long as necessary

Made in France by Nextmune

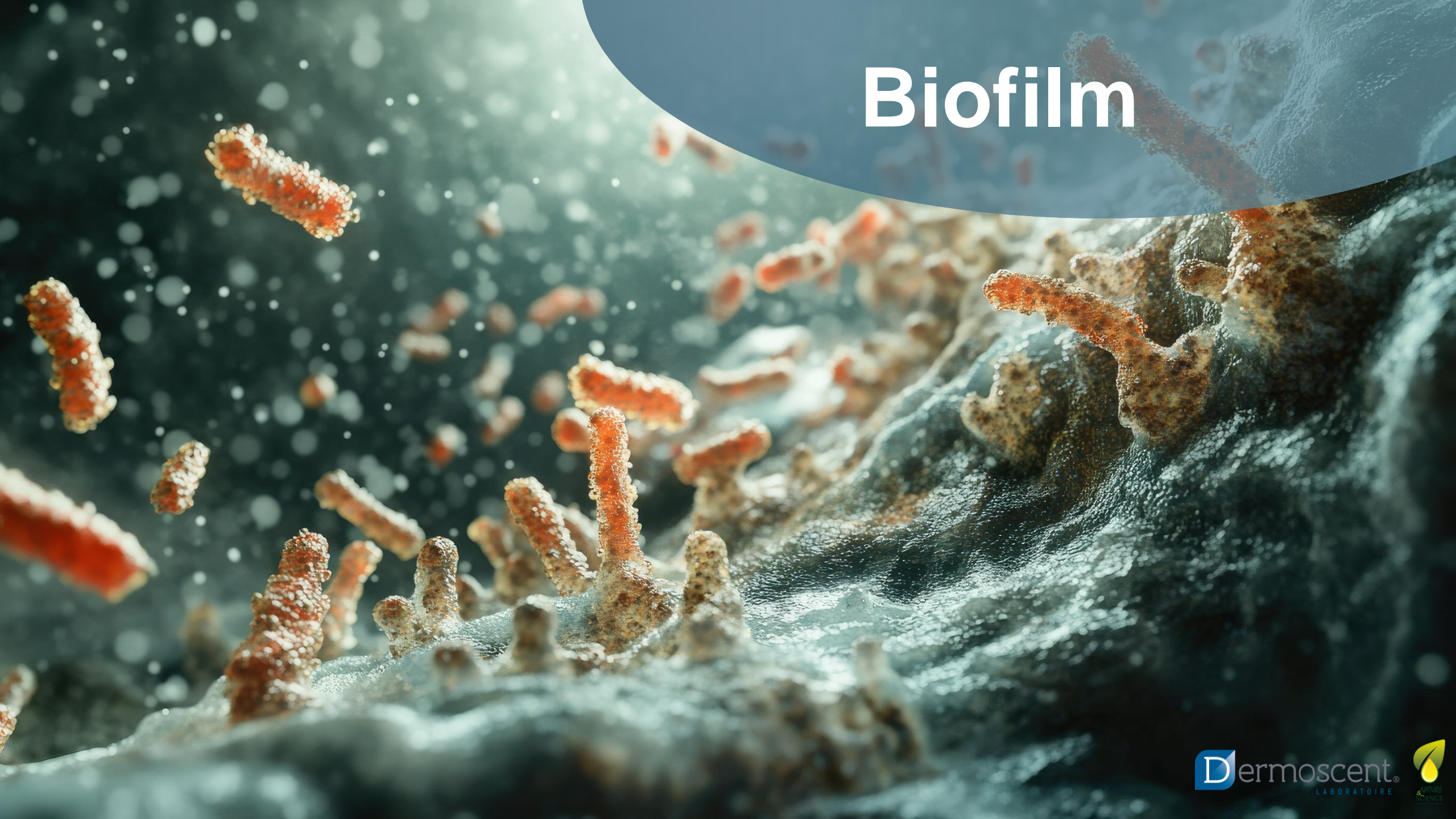


10 single-doses

KEY INGREDIENTS

- Green apple lipoamino acids
- N-acetylcysteine
- Propolis
- Honey
- Red myrtle essential oils

Biofilm



- A **biofilm** is a **community of microorganisms** that bind **together** and secrete an **adhesive and protective matrix**, giving them remarkable **resistance capabilities**.
- They contribute to the phenomenon of antibiotic resistance through several mechanisms ⁵:
 - * The adhesive and protective matrix **limits the effectiveness of antibiotics**.
 - * **Expulsion of certain antibiotics** from the matrix via efflux pumps.
 - * Collaboration between bacteria that **reduces their receptivity to antibiotics**.
- **Substances** such as **manuka essential oil**, **N-acetylcysteine** and **Tris-EDTA** have been successfully tested to **combat *Staphylococcus pseudintermedius* biofilm formation** ⁵.



In dogs, **biofilm formation** has been observed in **skin and ear infections** as well as in **bite wounds**.

PYO line solutions



PYOclean® Mousse



PYOclean® Spray



PYOclean® Oto





Antibiofilm

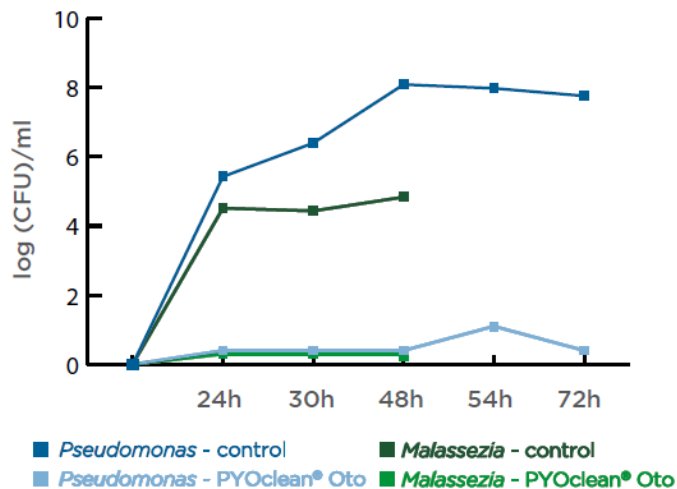
SCIENTIFIC EVIDENCE

Evaluation of N-acetylcysteine combined with natural extracts against *Staphylococcus pseudintermedius*, *Malassezia pachydermatis* and *Pseudomonas aeruginosa*

C. Feuillolay, E. Bensignor, L. Fabriès, R. Andriantsalama, C. Roques
Poster NAVDF 2019, Abstract Veterinary Dermatology, August 2019

PROTOCOL

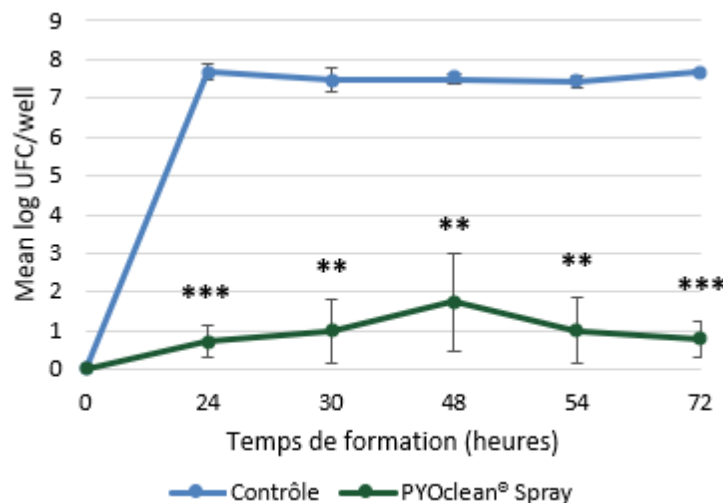
- Test on *Malassezia pachydermatis* & *Pseudomonas aeruginosa*, often involved in otitis with **PYOclean® Oto**
- Test on *Staphylococcus pseudintermedius* with **PYOclean® Spray**
- Follow up of biofilm formation on 48 or 72h in the presence of **PYOclean® Oto** and **PYOclean® Spray** or sterile distilled water as a control, with adhering cells counting
- Follow up on performed biofilms after 240min with **PYOclean® Oto**



Effect of **PYOclean® Oto** on biofilms

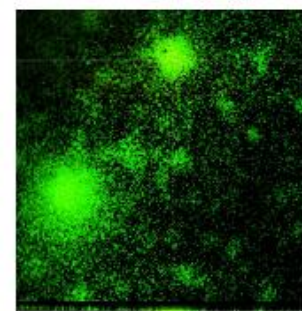
formation vs control

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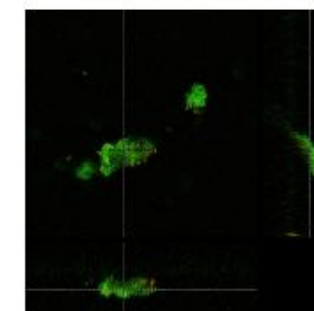


Effect of **PYOclean® Spray** on biofilm

formation of *S.pseudintermedius* vs control



Before
PYOclean® Oto



After 1h with
PYOclean® Oto

Disruption of *P. aeruginosa* **mature biofilm** after contact with **PYOclean® Oto** (confocal microscopy observation)

Your new tools



A brochure with the new guidelines and advantages of each PYO product



A presentation if preferred to show the interest of using essential oils in case of skin infections

References

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12. May P. *Guide pratique de phyto-aromathérapie pour les animaux de compagnie*, 2ème édition, 2024. BOOK.