



Silver Honey® Rapid Ear Care Clinical Test

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Overview

Honey and silver have been referred to as ageless remedies, since their medicinal uses date back centuries. Antibiotics are medicines used to treat bacterial infections and are comparatively new developments, the first antibiotic (penicillin) was originally used in large scale human populations during the Second World War.

Due to the use and over prescription of antibiotics in humans and animals, many bacteria have become resistant to antibiotics. Infections with resistant bacteria are more difficult and more costly to treat. Some infections are known to be resistant to all antibiotics, leaving no antibiotic therapy to cure those infections. For example methicillin-resistant *Staphylococcus pseudintermedius* (MRSP), is a bacteria resistant to many antibiotics and often responsible for causing in otitis externa and skin infections in dogs. Bacteria such as MRSP are difficult to impossible to treat with common antibiotics. Additionally the continuous application of antibiotics in the ear canal is likely to increase the chances for bacteria to become resistant. Therefore finding different topical remedies to treat common and resistant microbes is paramount.

The advent of antibiotic resistance has revitalized the interest to investigate alternative therapies, such as silver and honey, to treat bacterial infections. Today there are no reports that bacteria is able to become resistant to silver or honey, furthermore it has been shown that silver and honey can kill even antibiotic resistant bacteria. Using antibiotics judiciously by owners and veterinarians means, when possible, using alternative therapies to treat ear and skin infections to preserve antibiotics to be prescribed only when absolutely necessary.

In the past few years, scientists across the world have been researching the benefits of using silver and honey for the treatment of skin and ear infections in people and animals. This work has yielded very promising results.



Ear and skin infections in dogs

Veterinary studies have shown that in dogs, an important predisposing cause of otitis externa (ear infection) is skin allergies (atopic dermatitis). Atopic dermatitis is a common and lingering disease, which causes itching, skin infections and a predisposition to ear infections. The ear canal is an extension of the skin and many of the microbes causing skin infections are also responsible for causing otitis. Skin allergies and its complications, have a negative impact on the pet's and owner's quality of life.

It has been shown that as many as 75% of dogs that consult a veterinarian with an ear infection have a history of skin allergies. Furthermore, up to 20% of the veterinary consultations are for ear infections. The most common clinical signs for external ear infection are head shaking, ear scratching or itching (pawing at the ear), redness, malodor, discharge (goo) that varied in color from black to brown, and swelling of the ear opening and pinna.

In dogs, ear infections are commonly treated with a combination of topical antibiotic and antifungal products, which when used repeatedly, help microbes build resistance to the products. This means that the bacteria is able to evade the antibiotics that were once effective in killing it. It is common for ear infections to be long-lasting and recurring, leading to overuse of antibiotics during the life of the pet, prompting bacteria to become resistant to the antibiotics. As mentioned before, *Staphylococcus pseudintermedius* is the most common bacteria isolated from skin and ear infections in dogs and up to about half of these bacteria could be resistant to multiple types of antibiotics.

To make things worse, some bacteria inside the ear canal can organize in clumps protected by a "slimy goo" that sticks to surfaces like the ear canal, this is called biofilm (figure 1). Bacteria grouped in this biofilm are protected from antiseptics and antibiotics, making ear infections difficult to get rid of and lingering. Manuka honey and MicroSilver have been shown to be effective therapies for preventing and disrupting biofilm and inactivating bacteria that is organized in a biofilm.

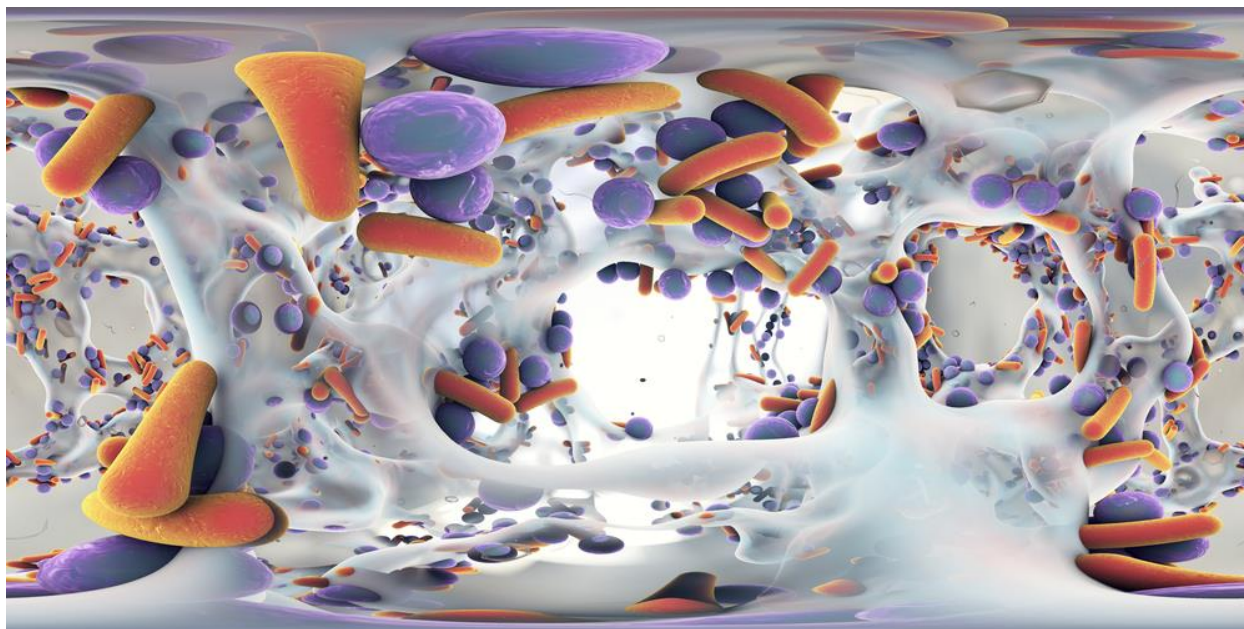


Figure 1 shows a diagram of different type of bacteria in a biofilm. The bacteria is trapped in this protective slimy goo which shields them from antibiotics and antiseptics. Biofilm can form inside the ear canal making infections more difficult to treat and more likely to return.

Silver Honey® Rapid Ear Care

W.F. Young is playing an important role in raising awareness and educating veterinarians and pet owners about the challenges of antimicrobial resistance. This is leading more veterinarians and consumers to use alternative, effective and safe natural topical therapies such as Silver Honey® Rapid Ear Care to treat uncomplicated and mild ear infections.

Silver Honey® Rapid Ear Care is the only product in the market with MicroSilver BG® and medical grade Manuka honey. A crucial advantage of this product is that it contains no antibiotics or antifungals. Furthermore silver and honey kill microbes by interfering with multiple vital microbial targets, so bacteria and yeast dies without the opportunity to develop resistance to it.

Silver Honey® Rapid Ear Care has demonstrated excellent efficacy in laboratory testing against two common bacteria and a yeast that cause ear infections in dogs. The tests revealed a 99.99% decrease in the number of these microbes after a short contact time.

Silver Honey® Rapid Ear Care is safe and cures mild to moderate otitis in most pets, preventing any delay in treatment with the potential to prolong the pets suffering and development of complications.



Ultimately using Silver Honey® Rapid Ear Care could improve the outcomes for pets and decrease the cost of treatment in the long term. As a pet owner it is always important to consult with your trusted veterinarian about the advantages of using Silver Honey® Rapid Ear Care on your animals.

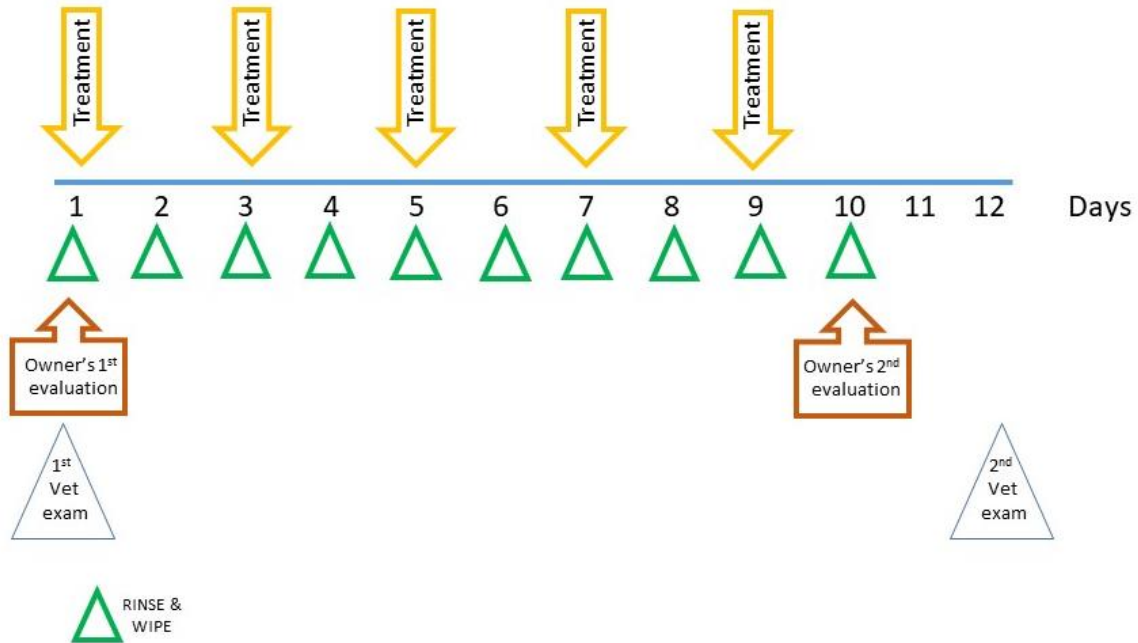
Field testing

W.F. Young, with its strong tradition in science based innovative animal products, designed a client owned dog ear infection clinical trial to evaluate the efficacy and safety of Silver Honey® Rapid Ear Care in real world situations.

A total 11 dogs with otitis externa were enrolled. Two general practice veterinarians and one Board Certified dermatologist participated in the study. Veterinarian's evaluated client owned dogs affected with an ear infection on day 1 and day 12 of the trial. Enrolled dogs were treated by their owners using the Silver Honey® Rapid Ear Care treatment for 10 days. The owners were involved in completing a questionnaire on day 1 and day 10 of the trial.

In the trial 9 out of the 11 dogs (81%) had a history of skin allergies. Most of the dogs had an ear infection that affected both ears.

Owners cleaned the dog's ear/s using the Silver Honey® Rapid Ear Care rinse and Silver Honey® Rapid Ear Care wipes every day for 10 days. On an every other day schedule owners applied Silver Honey® Rapid Ear Care concentrate gel into the affected ear/s, this was done after thoroughly cleaning the ear/s. The diagram below depicts the clinical trial timeline.



Clinical trial timeline diagram

Testing results

Assessing the patient’s or owner’s perception of a treatment benefits or harms is key in human and veterinary medicine. Since animals cannot communicate, evaluating the effect of a treatment from the owner’s point of view and the effect that the treatment has on the pets and owner’s quality of life is important.

W.F. Young’s marketing team held pet owners focus groups to learn about their attitudes, feelings, beliefs and experiences with ear infections in their dogs. Based on this information 3 important clinical signs by which owners more regularly identified an ear infection in their dog were: amount of ear wax, severity of itching and the smell. For the trial a scale from 0 (no signs) to 10 (severe signs) was included as part of the owner’s evaluation of Silver Honey® Rapid Ear Care treatment. Owners score the signs on day 1 and again on day 10.

The itch score improved in all dogs, but one. Similarly the smell improved in every dog in the trial but in one. Regarding wax it worsened in 2 dogs participating in the trial and improved in the rest. It is important to keep in mind that the physical characteristics of Manuka honey allows for water and fluids to be drawn from tissues, and this could explain the reason wax seemed to increase in 2 dogs.

When averages for these clinical signs were calculated, Figure 1, a downward trend was seen, indicating improvement in the severity of clinical signs as perceived by the owners.

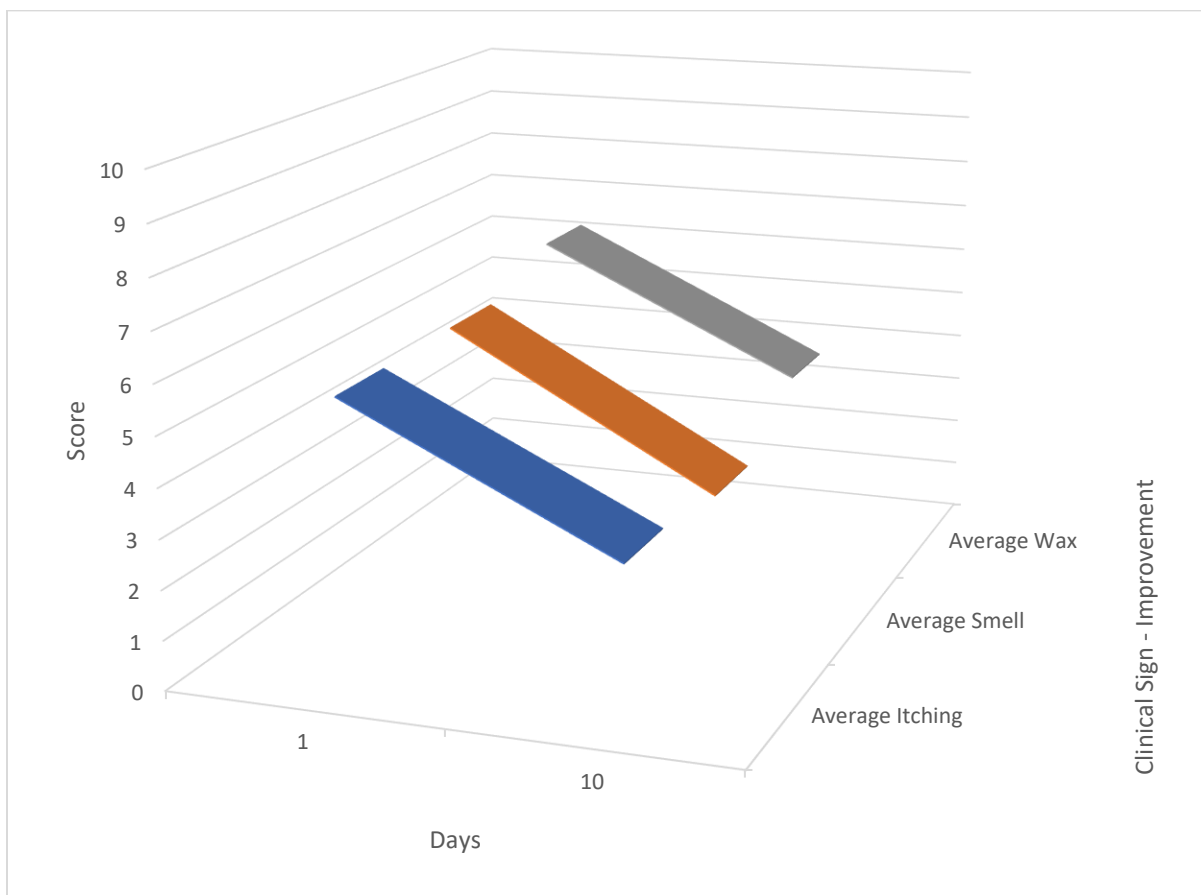


Figure 1 depicts the average value for the amount of wax, smell and itching as perceived by the dog owners. A numerical scale from 0 (no signs) to 10 (severe signs) was utilized. The overall trend for the 3 clinical signs are positive showing an improvement over the course of the treatment.



In order to measure the dog owner experiences with the use of Silver Honey® Rapid Ear Care, two questions were asked at the end of the treatment that is day 10. Owners were given a star rating to gauge their overall satisfaction with the product on a scale from 1 star (worse) to 5 stars (best). The majority of the participating owners assigned 5 or 4 stars rating to the use of the Silver Honey® Rapid Ear Care. Figure 2.

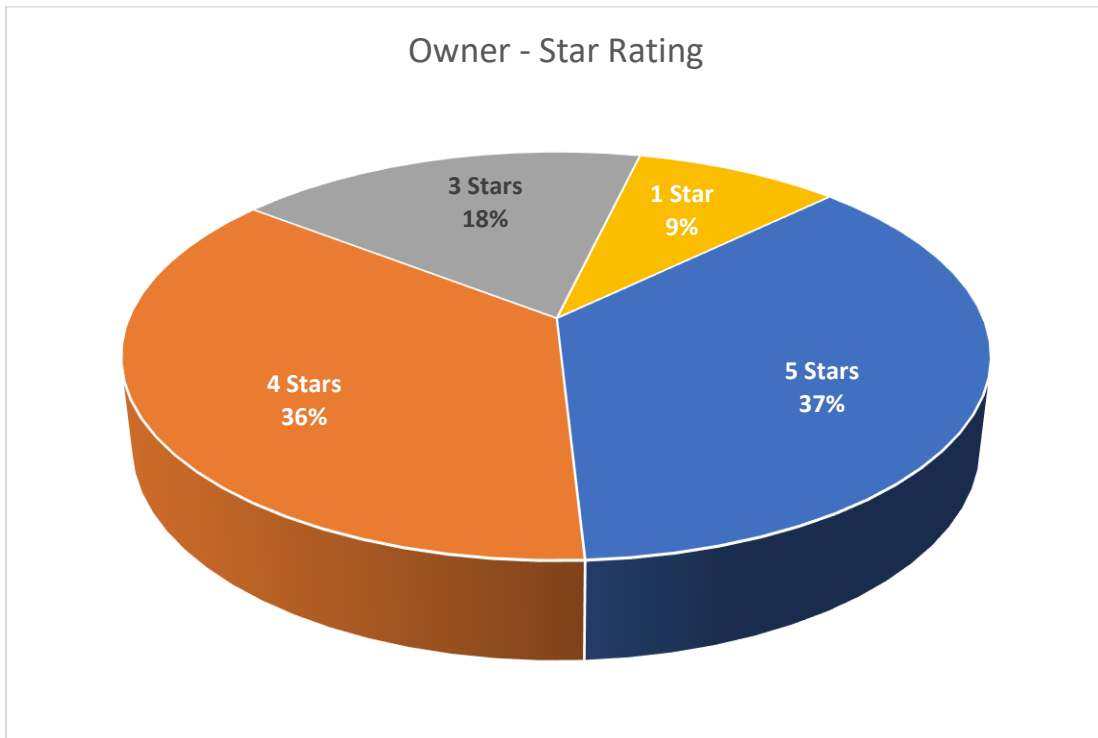


Figure 2 depict the dog owner’s star rating score, the scale use was from 1 star (worse) to 5 stars (best). The vast majority (73 %) of the 11 owners that completed the question assigned between 4 and 5 stars.

The ease of use of the Silver Honey® Rapid Ear Care was evaluated from the owner’s perspective on a scale from 0 (extremely hard to use), 5 (moderately easy to use) to 10 (very easy to use). Responses were collected from 7 of the participating owners. The overall average for ease of use was 8 points. The vast majority of owners (43%) gave 8 points out of 10 on the easiness of use. No owners thought that the use of the treatment was difficult or cumbersome. Figure 3.

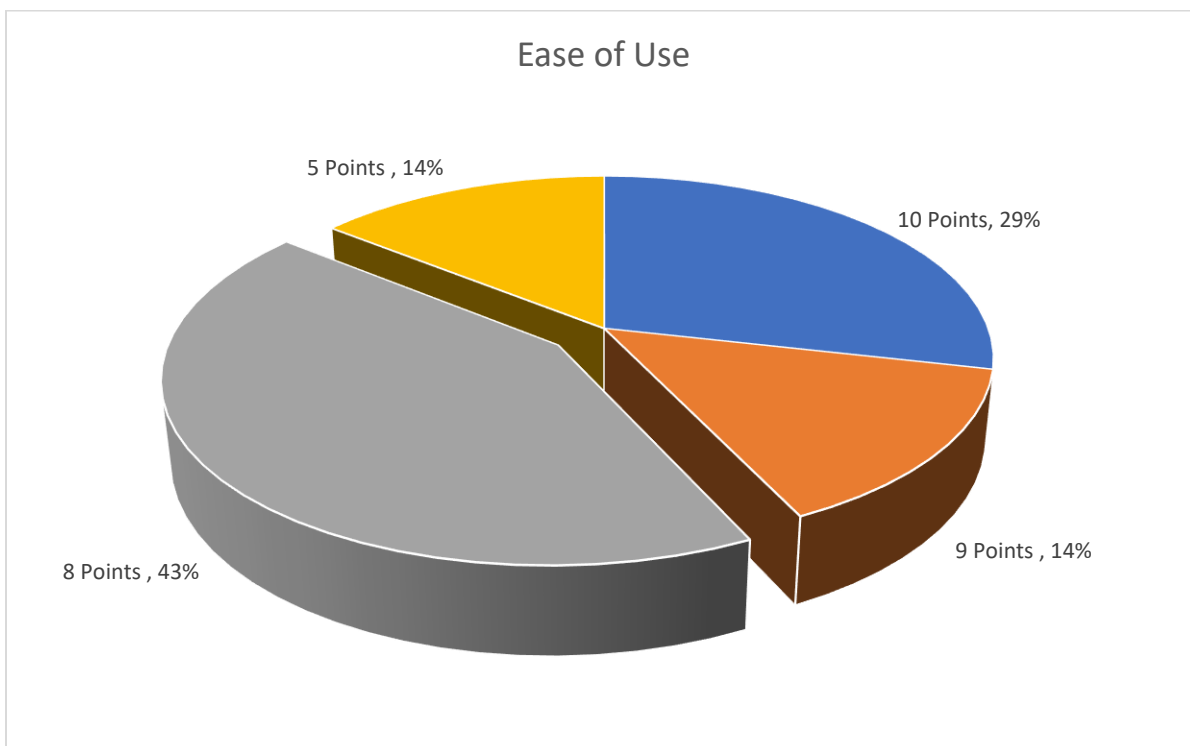


Figure 3 depicts the ease of use of Silver Honey® Rapid Ear Care from the owner’s point of view. A scale from 0 (extremely hard to use) to 10 (very easy to use) was used. The pie chart represents the points assigned by the owners and the percentage of owners that gave that particular score. A total of 7 owners completed this question.



Key Points

- Silver Honey® Rapid Ear Care was very effective in dogs with mild otitis externa. Using Silver Honey® Rapid Ear Care as soon as your dog exhibits signs of ear troubles could maximize the chances for rapid cure.
- Silver Honey® Rapid Ear Care can be the first line of defense against otitis and can be useful even before consulting the veterinarian.
- Silver Honey® Rapid Ear Care was shown to be an excellent alternative to using powerful antibiotics and antifungals. This will help reduce overall microbial resistance. Remember we should all do our part in the fight against antimicrobial resistance!
- Silver Honey® Rapid Ear Care was safe to use in dogs with otitis externa.
- Honey draws fluids from tissues. Hence the increase in wax could likely mean that Silver Honey® Rapid Ear Care is working on healing the ear infection. Keep the outside of the ear clean and gently remove wax build up.
- The product was easy to use and the majority of owners gave it a high rating. Having a product that is easy and safe to use increases the pet owner's compliance, which is a key factor for treatment success.
- Silver Honey Rapid Ear Care is readily available and should be a part of a first aid kit for dogs prone to reoccurring ear infections. It is best to be proactive at first signs to stop the infection in its tracks.

Footnote

MicroSilver BG® is a registered trademark of Bio-Gate AG.