SUMMIT VETPHARM

Technical Insight

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Vectra 3D™

Increase in white-tailed deer underlies increase in Lyme and other tick-borne diseases

Experts agree—tick borne diseases are everywhere and are increasing in prevalence throughout the United States.

One of the key factors behind this increase is the rise in numbers and geographic spread of the white-tailed deer population in the United States. The white-tailed deer population in 1890 was 300,000; in 2004, it reached approximately 24 million[1,3].

According to Dr. Michael Dryden from Kansas State University "*Ixodes scapularis* is one species that has shown a dramatic increase in its range and abundance across the eastern half of the United States. These changes are linked to the changes in distribution and of the white-tailed deer." *I. scapularis* is the vector of Lyme disease in the central and eastern United States, and also a vector of anaplasmosis and human babesiosis.

In 2006, the number of human cases of Lyme disease reported to the CDC totaled 19,931, making it the most frequently reported human vector-associated disease in the United States[2]. Dogs are highly susceptible to Lyme disease and seroprevalence to the Lyme Disease agent, *Borrelia burgdorferi,* has been reported to reach very high levels in areas of the Northeast, making Lyme disease a particularly important infectious disease of dogs in these areas.

Reported Cases of Lyme Disease -- United States, 2006[2]

Other tick-borne diseases of importance to dogs include ehrlichiosis, anaplasmosis, babesiosis, Rocky Mountain Spotted Fever, tick paralysis and hepatozoonosis.

> ***" I. scapularis is one species that has shown a dramatic increase in its range and abundance across the eastern half of the U.S. These changes are linked to the changes in distribution and abundance of the white-tailed deer."***
>
> ***Dr. Michael Dryden[3]***

> ***"We can definitely track the explosion in tick populations by following the deer. The deer have also been responsible for relocating ticks.... Some deer species once found exclusively in the south are now turning up as far north as Minnesota"***
>
> ***Dr. Ed Breitschwerdt[1]***

The increase in tick-borne disease is prompting a re-evaluation in the choice of acaricide by experts and clinicians alike

The increase in importance of tick-borne diseases means that it is now even more important to make sure that dogs receive the best acaricidal protection.

Due to its repellent and acaricidal activity, many experts believe that permethrin provides an excellent choice of protection against ticks and the diseases they carry.

Unlike the other commonly used topical acaricides—fipronil and amitraz—permethrin combines excellent killing activity against fleas, ticks and mosquitoes with long-lasting repellency. Put simply, ticks or mosquitoes that are repelled can't take a blood meal.

An increasing body of studies shows that permethrin is effective in preventing disease transmission by ticks and in protecting dogs against key tick-borne diseases[4].

> ***" Strategies for controlling tick-borne disease are changing. A previous strategy of treating animals and humans after exposure to potentially infected ticks has given way to a current strategy of vaccination and prevention of tick attachment and feeding"***
>
> ***Dr. Byron Blagburn[4]***

Vectra 3D™ provides proven protection for dogs exposed to tick-borne diseases

Vectra 3D™ is a fast acting, broad spectrum topical for dogs which protects against all stages of fleas, 4 species of ticks (*Ixodes scapularis, Amblyomma maculatum, Dermacentor variabilis and Rhipicephalus sanguineus)* and 3 species of mosquitoes.

It provides a great product choice for dogs exposed to ticks due to the high repellent and acaricidal efficacy of permethrin.

Studies have shown that Vectra 3D™ acts fast against existing tick infestations on the dog and continues to repel and kill ticks for at least one month[7].

	Deer tick	Brown dog tick	American dog tick	Gulf Coast tick
Lyme disease (Borreliosis)[1]	▼			
Rocky Mountain Spotted fever[3]		▼	▼	
Babesiosis[3,4]	▼	▼		
Ehrlichiosis[3,4,4]	▼	▼	▼	
Hepatozoonosis[3]				▼

> ***" Permethrin is one of the few ectoparasiticides that not only kills ectoparasites quickly but also repels them.....Repellency is an important chemical attribute, not only because it can prevent injury and discomfort induced by feeding, but also because it can prevent transmission of vector-borne diseases"***
>
> **Dr. Byron Blagburn[5]**

Vectra 3D™ is gentle enough for puppies as young as 7 weeks

Safety studies carried out in dogs and puppies from 7 weeks of age showed no clinically important adverse events when up to 5 times the normal dose was applied at weekly intervals[7].

The results of the laboratory safety studies were confirmed by a pre-launch community trial. Out of 203 dogs treated with Vectra 3D™, there were only two minor reports of adverse events—one dog was reported as lethargic, another showed loose stool[7].

Vectra 3D™ should not be applied directly to cats since they are unable to metabolize permethrin because of their unique physiology. However, Vectra 3D™ may be used on dogs in mixed pet households. An analysis of the use of topical permethrin containing products on dogs between 1996 and 2001 resulted in a reported adverse event rate of less than 0.00055% in cats which were casually exposed to permethrin in mixed species households[6].

Correct application to dogs will maximize safety even in multi-pet households

Clear labeling of Vectra 3D™ and the patented Bloodhound™ track and trace technology help to ensure that owners receive accurate instructions both on the pack and from their veterinarian.

Industry group data on the use of topical permethrin-containing products shows an adverse event rate of less than 0.00055% in cats which were casually exposed to permethrin in mixed species households[6].

Did you know? — Facts about Permethrin

Permethrin is approved by the United States EPA for use in, or on

- Pets and Humans
- Over 40 food/feed crops
- Livestock and livestock housing
- Mosquito abatement
- Residential use
- Clothing
- Transport vehicles

Permethrin is the main ingredient in Nix® head lice shampoo

References

1. Dale, Steve. Ticks Traveling, Carrying Disease to Unlikely Cities, www.dogsandticks.com/news/tickstravel.html

2. CDC website found at http://www.cdc.gov

3. Dryden M. *Suppl* Compend Contin Educ Pract Vet *Vol.* 28 No 3(B), March 2006 p6-9.

4. Blagburn B, *Suppl* to Compend Contin Educ Pract Vet *Vol.* 28, No 3 (B), March 2006. p14-21

5. Blagburn B, *Suppl* Compend Contin Edu Pract Vet *Vol.* 25, No. 5(A), 2003

6. FOI reference available on request from EPA.

7. Data on file

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