



Our fastest-working FRONTLINE® product—  
now with repellency action

# FRONTLINE®



STARTS  
**KILLING FLEAS**  
IN 5 MINUTES\*

STARTS  
**KILLING TICKS**  
IN 1 HOUR\*

**REPELS**  
TICKS AND  
MOSQUITOES



Adult Fleas



Flea Eggs



Flea Larvae



Adult Ticks



Chewing Lice



Mosquitoes



Stable Flies



\*Beginning two days after application



# Studies prove efficacy and repellency

FRONTLINE® Shield for Dogs has been tested to support its indications.



## EFFICACY AGAINST FLEAS AND TICKS

### STUDY 1



Evaluation of the Knock-Down Effect and Efficacy at 6 Hours of a Single Topical Treatment Against *Ctenocephalides felis* Fleas on Dogs. This study was performed using a prototype formulation which did not contain pyriproxyfen.<sup>1</sup>

#### STUDY DESIGN:

8 dogs were treated with a formulation of fipronil and permethrin and 8 dogs were untreated controls.\*

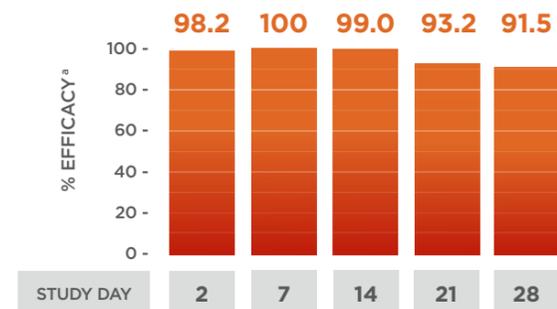
On day 0, treated dogs had the fipronil and permethrin formulation applied

On days 2, 7, 14, 21, and 28, dogs were infested with 100 fleas (*C. felis*)

Flea counts were performed at 6 hours after infestation

**FIGURE 1.**  
Mean Live Flea Counts and Efficacy Results at 6 Hours

\*Percent Efficacy =  $[(C-T)/C] \times 100$ , where T and C are arithmetic means of Treated and NA Group.



### STUDY 2



Evaluation of the Speed of Kill of a Formulation of Fipronil and Permethrin Applied as a Spot-On Formulation Against *Ixodes scapularis* Ticks on Dogs. This study was performed using a prototype formulation which did not contain pyriproxyfen.<sup>2</sup>

#### STUDY DESIGN:

Of 12 dogs in the study, half (6) were treated with a formulation of fipronil and permethrin and half (6) were untreated controls.\*

Dogs were infested post-treatment on Days 2, 7, 14, 21, and 28 with 50 *Ixodes scapularis* ticks

Insecticidal efficacy was based on arithmetic means of the live and/or dead tick counts on the treated dogs at 6 hours after infestation

**FIGURE 2.**  
Summary of Analysis Results of Total Live Tick Counts at 6 Hours

\*Percent efficacy =  $[(C-T)/C] \times 100$ , where T and C are arithmetic means of Group 5 treatment group and control group.



\*This formulation lacks pyriproxyfen and is therefore a different formulation than FRONTLINE SHIELD.

## MOSQUITO REPELLENCY

### STUDY 3



A Study to Confirm the Effectiveness of Single Topical Treatment of Fipronil and Permethrin to Repel and Kill *Culex pipiens* Mosquitoes on Dogs. This study was performed using a prototype formulation which did not contain pyriproxyfen.<sup>3</sup>

#### STUDY DESIGN:

8 dogs were treated with a formulation of fipronil and permethrin and 8 dogs were untreated controls.\*\*

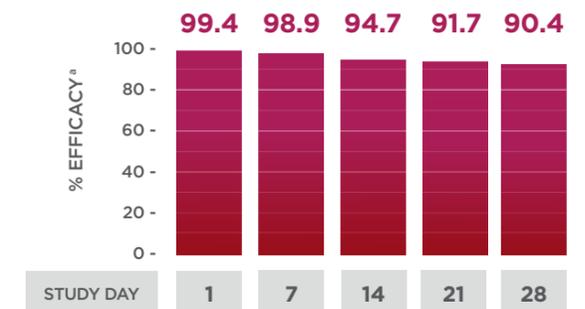
On day 0, treated dogs had the fipronil and permethrin formulation applied

On days 1, 7, 14, 21, and 28, dogs were anesthetized and exposed to 100 (*C. pipiens*) mosquitoes for 60 minutes

Mosquito counts were performed and live or dead non-engorged mosquitoes were reported as repelled

**FIGURE 3.**  
Summary of *Culex pipiens* Repellency Results

\*Percent efficacy as measured by the percent reduction of engorged mosquitoes =  $100 \times [(C-T)/C]$ , where C and T are the geometric means of the control and treated groups, respectively.



### STUDY 4



A Study to Confirm the Effectiveness of a Single Topical Treatment of Fipronil and Permethrin to Repel and Kill *Aedes aegypti* Mosquitoes on Dogs. This study was performed using a prototype formulation which did not contain pyriproxyfen.<sup>4</sup>

#### STUDY DESIGN:

8 dogs were treated with a formulation of fipronil and permethrin and 8 dogs were untreated controls.\*

On day 0, treated dogs had the fipronil and permethrin formulation applied

On days 1, 7, 14, 21, 28, and 35, dogs were anesthetized and exposed to 100 (*A. aegypti*) mosquitoes for 60 minutes

Mosquito counts were performed and non-engorged live or dead mosquitoes were reported as repelled

**FIGURE 4.**  
Summary of *Aedes aegypti* Repellency Results

\*Percent efficacy as measured by the percent reduction of engorged mosquitoes =  $100 \times [(C-T)/C]$ , where C and T are the geometric means of the control and treated groups, respectively.



\*\*This formulation lacks pyriproxyfen and is therefore a different formulation than FRONTLINE SHIELD.

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KILLING FLEAS  
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**STARTS  
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**REPELS  
TICKS, MOSQUITOES  
AND STABLE FLIES**

**KILLS  
TICKS, FLEAS, FLEA  
EGGS AND LARVAE,  
AND CHEWING LICE**

**AIDS  
IN CONTROL OF  
SARCOPTES MITE  
INFESTATIONS**



\* Beginning two days after application

**References:** 1. Data on file at Boehringer Ingelheim. 2. Data on file at Boehringer Ingelheim. 3. Data on file at Boehringer Ingelheim. 4. Data on file at Boehringer Ingelheim.

**PRECAUTIONS:  
HAZARDS TO HUMANS**

**WARNING:** Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash clothing that may have come in contact with the product before reuse.

**HAZARDS TO DOMESTIC ANIMALS**

For external use on dogs ONLY. Do not use on animals other than dogs. Do not use on dogs under 9 weeks of age or weighing less than 5 lbs. Individual sensitivities may occur after using ANY pesticide product. Dogs may experience some temporary irritation at the site of product application. If signs of sensitivity occur, bathe your dog with mild soap or shampoo and rinse with large amounts of water. If signs of sensitivity occur and persist, contact a

veterinarian immediately. If your dog has an unusual reaction to the initial application, consult a veterinarian before repeating application. Certain medications can interact with pesticides. Consult a veterinarian before using on medicated, debilitated, aged, pregnant or nursing dogs, or dogs known to be sensitive to pesticide products. Consult a veterinarian for guidance on use against *Sarcoptes* mites. This product is not a substitute for a prescribed heartworm preventative. Call 1-888-637-4251, for assistance.

**PHYSICAL OR CHEMICAL HAZARDS**

Do not allow this product to come in contact with an oxidizing agent, as a hazardous chemical reaction may occur.

