

Control of the Brown Dog Tick

two new insecticides control infestations of pest in kennels and on dogs without adverse effects on animals or humans

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Brown dog ticks have become resistant to a number of the standard insecticides. Pet owners, veterinarians, and kennel operators have asked for new compounds for tick control.

Dri-Die 67

Some experimental work on dog ticks was included in studies with a silica aerogel—Dri-Die 67—in a large boarding kennel in west Los Angeles. Dri-Die 67 could control non-feeding ticks in the kennel cubicles and on the dogs but was ineffective for ticks while feeding on the dogs. Even though the ticks were thoroughly dusted and re-dusted with Dri-Die 67, they continued feeding undisturbed. A tick requires from six to 21 days to complete its blood meal and consumes such copious quantities of blood that the water loss caused by the dust is not lethal. However, engorged dog ticks exposed to Dri-Die 67 in the laboratory or from dusted kennel cubicles died in 42–69 hours, after water loss of between 33% and 38% of their total body weight, and were completely desiccated at the end of 96 hours, having lost 58% of their weight.

Dibrom-Dri-Die 67

The effectiveness of 2% Dibrom added to Dri-Die 67 in causing feeding ticks to become detached from dogs was tested on eight of the most heavily tick-infested dogs in the kennel. Each dog's cubicle also was dusted thoroughly with Dibrom-Dri-Die 67 at the rate of one pound per thousand square feet of cubicle area with a bellows hand duster. Special care was taken to reach all crevices—particularly those on the underside of the roof of the cubicle, where the heaviest concentration of ticks usually occurs. The brown dog tick, once off an animal, has a strong tendency to crawl upward. The female, especially, likes to lodge in a crack, lay her eggs there, and remain in hiding until another blood meal is needed.

The long-haired dogs—two poodles, a collie, a terrier, and a shepherd—were not shorn prior to dusting. The compound, 1½ ounces per animal, was applied with a hand duster over the entire body, with particular care in dusting the ears, the neck, the head and chest, and

between the toes. The dust was carefully worked into the hair of the dogs with the hands. All the dogs were dusted in the open and, though two of the dogs sneezed and coughed for a short time, none of the dogs suffered ill effects from the dust.

The dogs were inspected every four days following the initial dusting. On the fourth post-dusting day, all the dogs were free of adult, feeding ticks. A number of dead, dust-covered, immature ticks were found in the ears, on the head and chest, and between the toes of the treated dogs. Some live immature ticks were found on the short-haired dogs—dachshund, mongrel, and beagle—but there was a complete absence of live ticks on the long-haired dogs, which still had a good quantity of the dust on their hair. Though some of the dust remained on the short-haired dogs, much of it had been brushed off. At the end of the eighth day, the long-haired dogs were still free of ticks, and the short-haired dogs had no adult ticks on them.

By the twelfth post-dusting day, five of the dogs were returned to their owners. New dogs—tick-infested and not dusted—were brought into the experimental cubicles and allowed to mingle with the three remaining experimentally dusted animals. Some of their ticks apparently were transferred to the two experimental short-haired dogs, which showed a great increase in number of immature ticks and harbored adult ticks for the first time since dusting. The experimental long-haired collie, in a cubicle containing a tick-infested dog, remained free of ticks. On the sixteenth post-dusting day there were still no ticks on the collie, and the mongrel and beagle remained infested.

Dead and near-dead adult and immature ticks were found on the floors of the dusted cubicles until the eighth post-dusting day, when the floors of the cubicles had to be washed. Much of the dust was removed, and the washed floors were not re-dusted.

Long-haired dogs need only one treatment with Dibrom-Dri-Die 67, but short-haired dogs should be re-dusted as frequently as the dust is brushed off, or until the infestation is controlled. Cubicle or cage floors should be re-dusted after cleaning.

Where gravel or granite chips are used as kennel flooring, one-half to three-fourths pound of Dibrom-Dri-Die 67 has been found sufficient to treat a 4' × 10' cubicle. With this compound it is advisable to use too much rather than too little of the dust.

Dibrom 8 Emulsive

In experiments in the cubicle and exercise areas in the kennel, it was found that solutions containing one-fourth, one-half, and one ounce of Dibrom 8 Emulsive per gallon of water sprayed on wooden and concrete surfaces could control ticks for periods of one month or longer.

The next experiments were to test sponging the dogs with a weak solution of Dibrom 8 Emulsive. Toxicological studies showed that dogs drenched with a one-ounce-per-gallon water solution of Dibrom 8 Emulsive suffered no ill effects. Actually the lower dosage rate of one-sixth ounce—one teaspoonful—of Dibrom 8 Emulsive per gallon of water was sufficiently potent to kill all the ticks found infesting any dog.

On July 27, 1959, a program was undertaken to sponge all tick-infested dogs in the experimental kennel with a solution of one-sixth ounce of Dibrom 8 Emulsive per gallon of water, following a soap and water bath. The Dibrom sponged dogs were allowed to drip somewhat dry and then put in sunny open air cages to finish drying. Towels or dryers would remove too much of the Dibrom.

Four hours after the dogs were sponged with Dibrom, dead ticks started to fall, and in six hours all ticks remaining on the animals were dead. Between July 27 and August 24, 209 dogs—45 breeds—were bathed and sponged with Dibrom 8 Emulsive. One treatment gave excellent control of brown dog ticks in every case, and none of the dogs was adversely affected by the treatment.

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