UNIVERSIDAD COMPLUTENSE DE MADRID

FACULTAD DE VETERINARIA

Madrid 20thNovember 1998

Professor Jose Alberto Rodriguez Rodriguez, head of the Animal Pathology Department (Animal Health) at the Faculty of Veterinary Science of the Complutense University of Madrid, on the 5th June 1998, as Director of the investigations team, conducted a trial with Mr. Jose Luis Arranz Gil of "FALBALAMENDI, S.L." and Ms. Paloma Sgimon Escobeds of "SELLUY" General Distributor S.L. The trial was named, "The Insecticide Evaluation of Catandog's,
And it was conducted on the "European brown tick" on dogs (Rhipicephalus Sanguineus), in natural conditions.

The duration of the project was 2 months.

Professor Rodriguez reported:
We studied the repellent action of the Catandog's tags used on dogs from a group situated in a rural area of Castilla la Mancha, the area with the greatest natural infestation of ticks and fleas on dogs.

INTRODUCTION

The sensitivity of a host to a chemical insecticide was studied on different arthropods, and part of the most evident action and ease of evaluation was the loss of life that it produces. Other parameters investigated (which manifest themselves depending on the degree of protection): the incapacity to complete development, increasing the time required to finish the biological circle, the number of specimens present in each host, the decrease in the number of pregnant females, also the decrease in their weight, the laying of eggs and the viability of those eggs.

As this work consisted in evaluating the repellent action on dogs with natural infestation of ticks and fleas, carrying the tag called Catandogs', practically the only parameter that could be investigated was to count periodically the number of species of each of the groups of arthropods that were found at a given time; choosing the time of most activity. This is what has been done in this study.

MATERIAL AND METHODS

They were housed in a shed 12m x 15m, with an entrance door, another door opening onto a run and various windows situated on the same wall as the doors. In the shed, no insecticides of any kind had been used, nor bleach, since March.
The dogs had not been treated with any insecticide of chemical origin for a year. The majority of the dogs were Bloodhounds or Bloodhound x Mastiff (Pyrenean Mountain dog). The dogs were fed with commercial granulated food from "Gallina Blanca Purina" and were given lib water. The dogs were let loose once a day for around 3-4 hours.
Before the tags were administrated, the animals were tested and were placed in groups, 15 with the tags and 10 as controls.

Day 1st was Saturday 8th August, on which the number of ticks and fleas were counted, before the tags were put in place on the designated animals. The experiment was followed up on a monthly basis. Counting was done on Saturday 5th September (day 28 p.i.); on Thursday 8th October (day 61 p.i.)

The level of infestation was expressed as the average of fleas/ticks detected in the dogs of each group with and without tags on the day of counting .The purpose of this was to determine if there were any significant differences between the different groups.
The averages obtained were compared with student test or with an analysis of discrepancies in function from which 2 or more averages were compared.

RESULTS

Table 1 represents the average number of fleas detected in the dogs of each of the evaluated groups (with tag/without tag) on the day on which the observations were made. The most abundant species is the human flea (Pullex irritans). This species is cosmopolitan and is present all the year round.

In Table 1 we have collected all the statistical parameters that define each one of the group of dogs on the day on which the level of flea infestation was determinated.
As there were no significant differences ($p>0.05$) on Day 1 between the average number of fleas detected in the group with tags (2.800) and the one without tags (2700), we can make the following comparisons between the group treated and untreated on the different days of observation.
Using, as control the untreated group on a specific day and the treated group of dogs on the same day by analyzing these averages for the student test, it was found that there were significant differences in three days study between the average number of fleas detected in the treated group, in contrast to the untreated group: (day 28: $p<0.01$, day 61 $p<0.0001$). The average number of fleas detected was always higher in the group of dogs without tags (day 28 2.1 vs. 0.47; day 61 1.90 vs. 0.33).

In Table 2 the statistical parameters define each of the group of dogs on the days that it was assessed as to its level of tick infestation.

As there are significant differences ($p<0.01$) on Day 1 between the average number of ticks detected in the group with tags (6.73) and without tags (2.20), comparisons cannot be made in the same way as in the study for fleas.
In this case it is more appropriate to use, as the control group, the dogs with a tag. The average detected ticks on Day 1 for this group, the dogs with a tag; is compared with the average obtained ticks in the subsequent recounting days. In the same way we will deal with the groups without tags. Given that the comparison between averages is not done with independent data, we will apply the statistic test for data depending on observation on the same animal at different times.

In the comparison of the averages obtained in the group with a tag, we only had one averages to compare. On Day 61, we did not detect ticks in the dogs of this group; we used a Student Test for the matching data. The results obtained indicate that there exists a significant decrease ($p<0.05$) in the number of average ticks detected between Day 1(6.73) and Day 28(1.47).

In the group without a tag where infestation existed until and including the 61st Day, we compared the three averages obtained for an analysis of changes for the matching data.

The results indicate that there are not significant differences ($p<0.05$) between the average number of ticks detected between Day 1 (2.20), Day 28 (4.20) and
Day 61 (2.00)

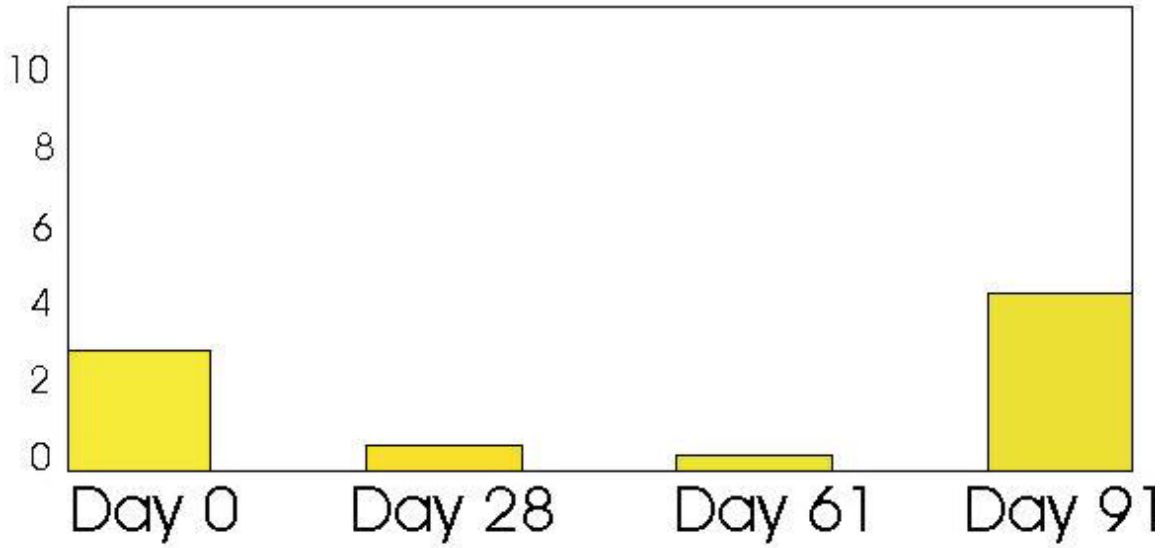
DISCUSSION

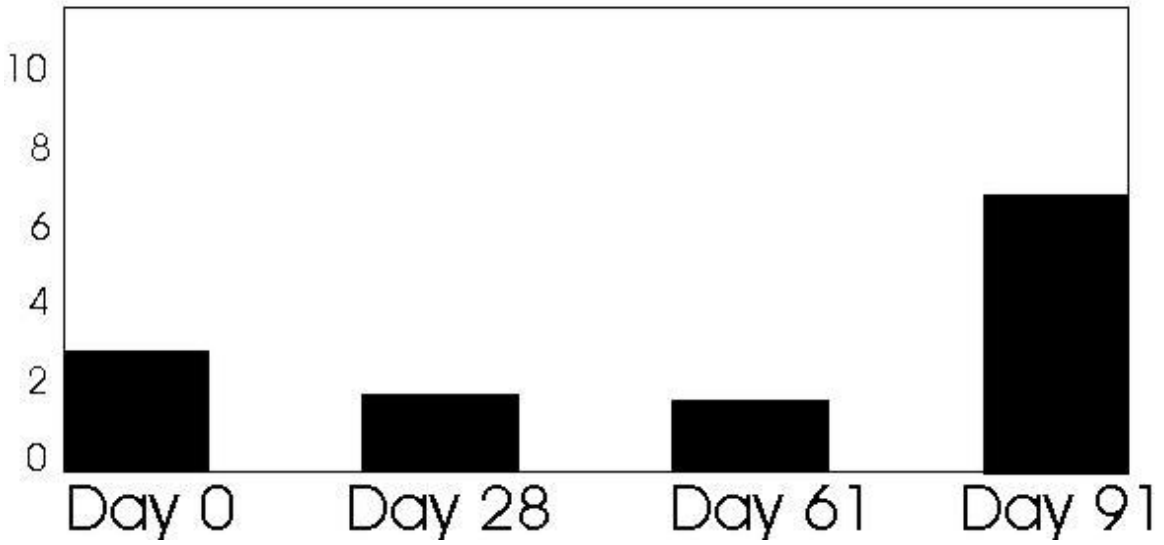
If we analyze the data we obtained on the fleas in Table 1, we can confirm from the statistical point of view (Table 1), that there was a decrease in the amount of infestation in the groups with the tag in contrast to the ones without a tag, on the days of re-counting. In reference to the data on the ticks (Table 2) we observed that in the group of dogs with a tag there was significant decrease of infestation on day 28 and ticks disappeared from that day onwards; we did not find any on day 61. In the animals without the tags, the presence of ticks on days 28 and 61 is highlighted but we did not observe any decrease in their number on the day of the recount, compared with Day 1.

Graph 1

Fleas

With CatanDog's / Without CatanDog's

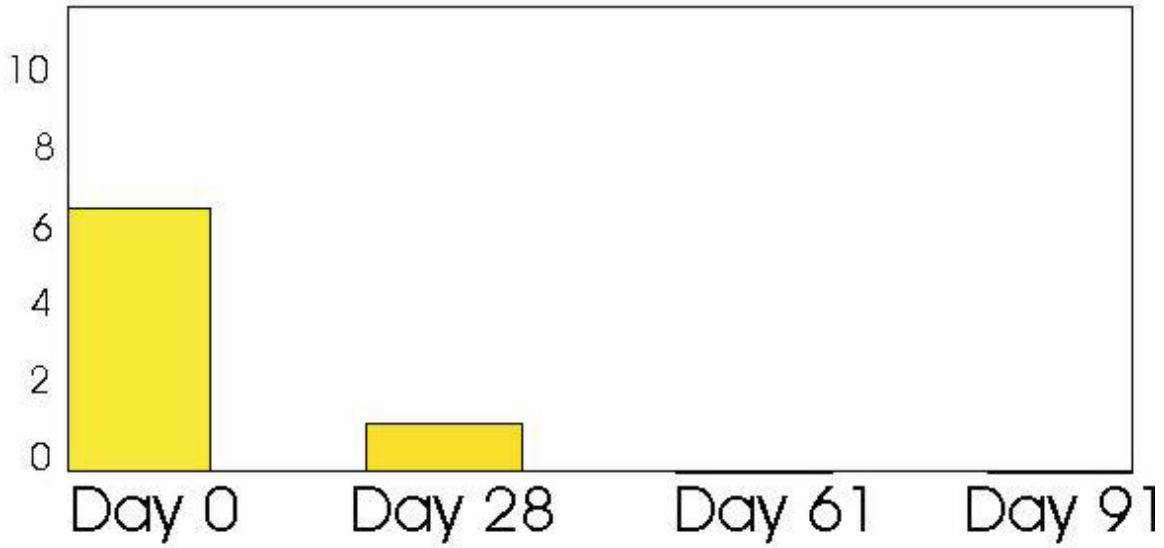




Graph 2

Ticks

With CatanDog's / Without CatanDog's



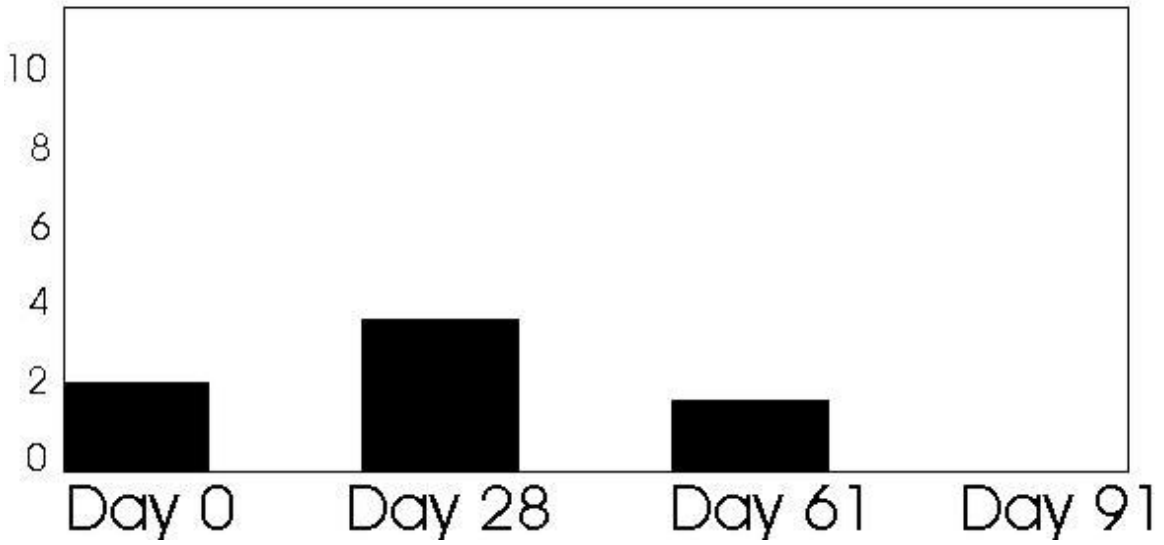


TABLE 1
FLEAS

Parameters	Treated Day 1	Not treated Day 1	Treated Day 28	Not treated Day 26	Treated Day 61	Not treated Day 61
Median	2800	2700	0,4667	2100	0,3333	1900
No/animals	15	10	15	10	15	10
Std. deviation	1373	1703	1060	2470	0,8165	2846
Std. error	0,3456	0,5385	0,2737	0,781	1,2108	0,9
Minimum	0	0	0	0	0	0
Maximum	6000	6000	3000	6000	3000	6000
Average	3000	3000	0	1500	0	0
I.Con 95% (LI)	2039	1482	-0,1205	0,333	-0,1358	-0,1358
I.Con 95% (LS)	3561	3918	1054	3867	0,7855	3936
Test of students		0,2268		0,0026		<0,0001
		No significance		Significance		No significance

TABLE 2
TICKS

Parameters	Treated Day 1	Treated Day 28	Not treated Day 1	Not treated Day 28	Not treated Day 61
Median	6,733	1467	2200	4200	2000
No/animals	15	15	10	10	10
Std. deviation	11087	5139	4131	6877	6325
Std. error	2863	1327	1306	2175	2000
Minimum	0	0	0	0	0
Maximum	30000	2000	10000	20000	20000
Average	0	0	0	0	0
I.Con 95% (LI)	0,593	-1380	-0,755	-0,719	-2524
I.Con 95% (LS)	12874	4313	5155	9119	6524
Test of students		0,0023		0,3309	
		Significance		Significance	