UNIVERSIDAD COMPLUTENSE DE MADRID
FACULTAD DE VETERINARIA

Madrid 20th November 1998

Professor Jose Alberto Rodriguez Rodriguez, head of the Animal Pathology Department (Animal Health) at 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 Catan'dogs, on the "European brown tick" in dogs (Rhipicephalus Sanguineus), in natural conditions.

The duration of the proyect was 2 months.

Professor Rodriguez reported:

We studied the repellent actino of the Catan'dogs 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 in dogs.

Introduction

When sensitivity to a chemical insecticide in a host is studied in differents arthropods, part of the most evident action and ease of evaluation is the loss of life that it produces. Other parameters investigated (wich will manifest themselves depending on the degree of protection):the incapacity to complete development, the increase in 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 og eggs and the viability of those eggs.

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

Material and Methods

The dogs on wich the study was conducted were from a group located in a rural region of Castilla La Mancha. 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 In the shed, no insecticide of any kind had been used, not bleach, since March. The dogs had not been treated for a year with any insecticide of chemical origin. The majority of the dogs were Bloodhounds or Bloodhound x Mastiff (Pyrenean Mountain dog) The dogs were fed with commercial granulated feed from "Gallina Blanca Purina" and add lib water. The dogs were let loose once a day for around 3-4 hours. The Catan'Dogs tags were supplied by Falbalamendi S.L.
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 a 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 gruops.
The averages obtained were comprared with student test or an analysis of discrepancies in function from which 2 or more averages were compated.

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 groups og dogs on the day on which the level of flea infestation was determinated.

As there are 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 comparisions between the group treated and untreaded on the different days of observation.

Using, as control the untreated group on a determinated day and the treated group of dogs on the same day by analysing these averages for the Student test, it was found that there were significant differences in the 3 days of the 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 groups of dogs on the days that it was assessed as to it's 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), comparisions cannot be made in the same way as in the study for fleas. In this case it is more appropiate 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; the average detected ticks on Day 1 for this group and compare it with the average obtained in the subsequent recounting days. In the same way we will deal with the gruops without tags. Given that the comparision 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 comparision of the averages obtained in the group with a tag, because 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 because 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

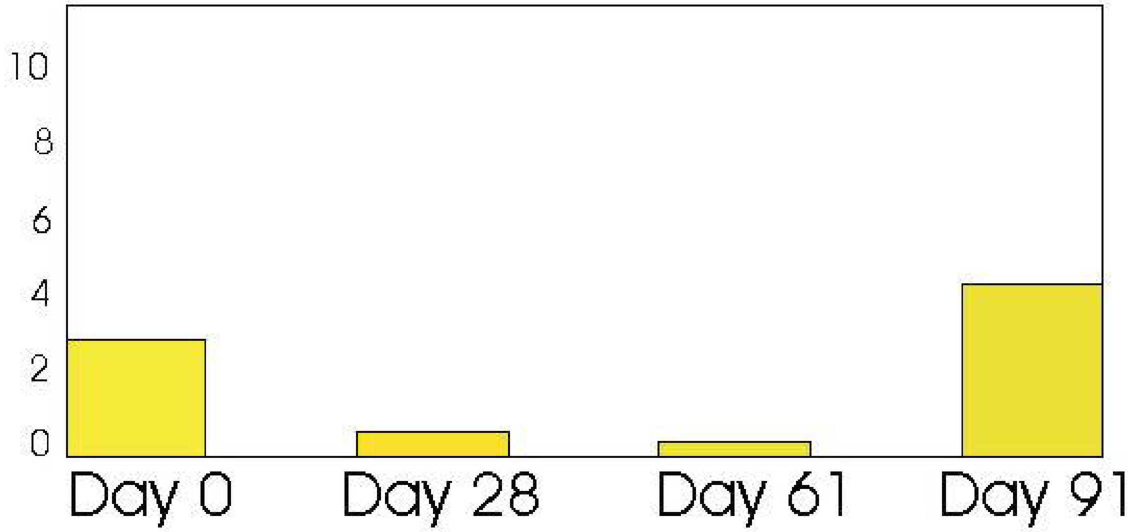
If we analyse the data we obtained on the fleas in Table 1, we can confirm from the statistical point of view (Table 1), that there was a decrease in the amount of infestation in the groups with the tag in contrast to the ones without a tag, on the days of re-counting.

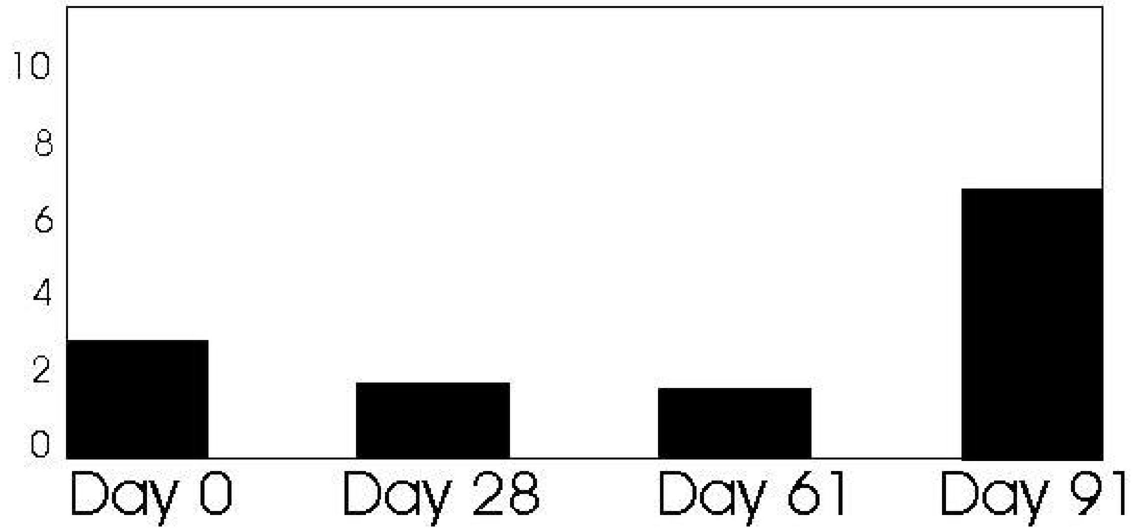
In reference to the data on the ticks (Table 2) we observed that the group of dogs with a tag produced a significant decrease on day 28 and ticks disappeared from that days onwards; we did not find any on day 61. In the animals without the tags, the presence of ticks on days 28 & 61 is highlighted but 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

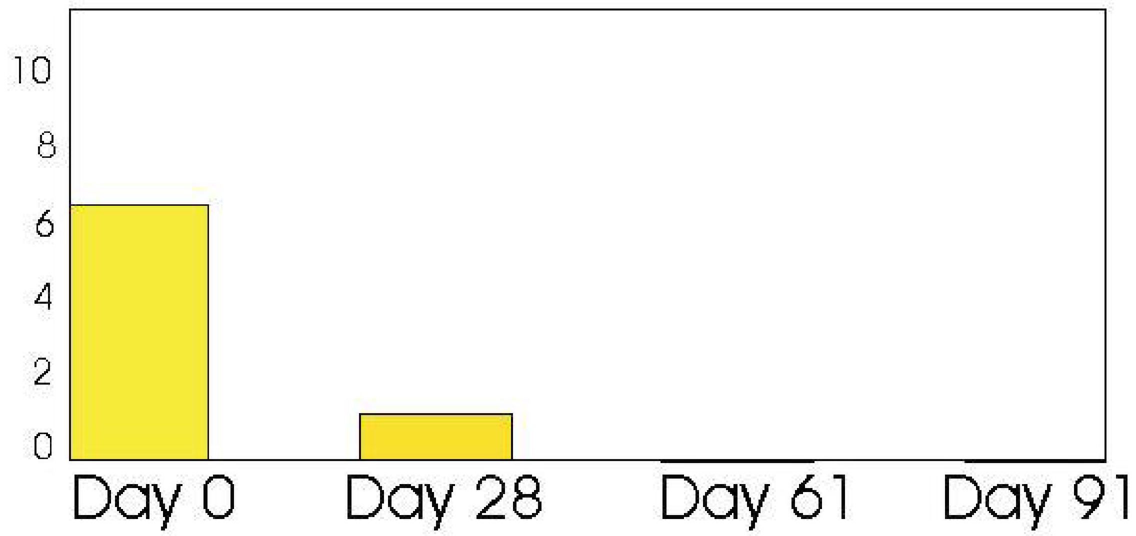




Graph 2

Ticks

With CatanDog's / Without CatanDog's



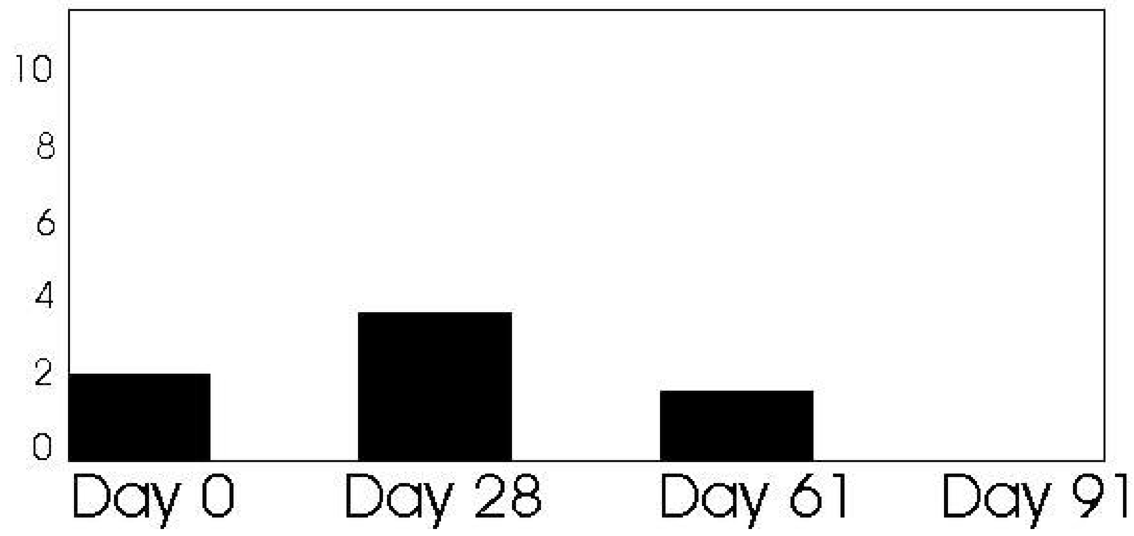


TABLE 1

FLEAS

Summary of data of Fleas

Parameters	Treated	Non-Treated	Treated	Non-Treated	Treated	Non-Treated
	Day 1		Day 28		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	0,2108	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
t of students		0,2268		0,0026		<0,0001
		No significance		Significance		Significance

TABLE 2

TICKS

Summary of date on ticks

Parameters	Treated	Treated	Non-Treated	Non-Treated	Non-Treated
	Day 1	Day 28	Day 1	Day 28	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
t of students		0,0023		0,3309	
		Significance		No significance	