



PARSEMUS FOUNDATION

CALCIUM CHLORIDE NONSURGICAL MALE DOG STERILIZATION: FIRST REPORT OF LARGE-SCALE FIELD USE

Note from Parsemus Foundation:

At the November 2011 Animal Grantmakers meeting, we informed other funders about the research on calcium chloride dihydrate nonsurgical male dog and cat sterilization and showed how simple the sterilant is to make, with a demonstration of mixing it right at the lunch table. One of the funders, the Greenbaum Foundation, was impressed enough to tell grantees about it.

We heard no more about it until August 2012, when we got the following e-mail from the Greenbaum Foundation:

“I’m not sure if i’ve ever expressed my gratitude for sharing with me the simple and easy non-surgical way to sterilize male dogs. One of the groups we fund in Nepal is using it and is very successful with it.”

We were extremely curious, to say the least, and asked the Greenbaum Foundation to pass along the questions listed at the end of this document. Such use in Nepal would be the first known large-scale field use (the largest field use before that being 2012 in Kolkata, India, 52 dogs, not yet published), and the first large enough to determine whether more rare side effects (in fewer than 1 of 100 dogs) might be expected. What follows is the animal welfare group’s unedited report of its experience with the sterilant, which may be useful to other groups trying to decide whether trying the sterilant would be appropriate in their context.

*Committed to innovative and/or neglected medical research,
with a focus on animal sterilants, contraceptive development, and breast cancer.
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REPORT FROM NEPAL

DREAMS ‘Devoted Radical Environment Animal Movement Society’ is a ‘not for profit’ organization based in Kathmandu, Nepal that provides food, shelter and much needed medical treatment to the stray animals, and works for the conservation of endangered species of plants and animals.

DREAMS organized an ‘ANTI-RABIES & NON-SURGICAL STERILISATION CAMPAIGN’ with the fund donated by James Greenbaum Foundation and Abharam Foundation. Our program was directed by Dr.Arjun Aryal and Dr.Awadesh Jha and assisted by Senior Chief Technician Mr.Kailash Thapa.

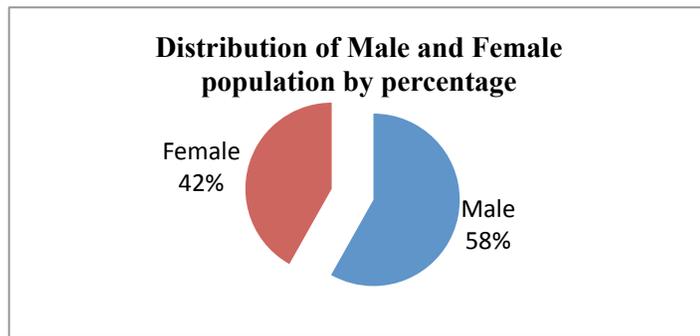
NON SURGICAL STERILIZATION (Using Calcium Chloride dehydrate)

AREA AND NUMBER OF DOG POPULATION AT OUR PROJECT

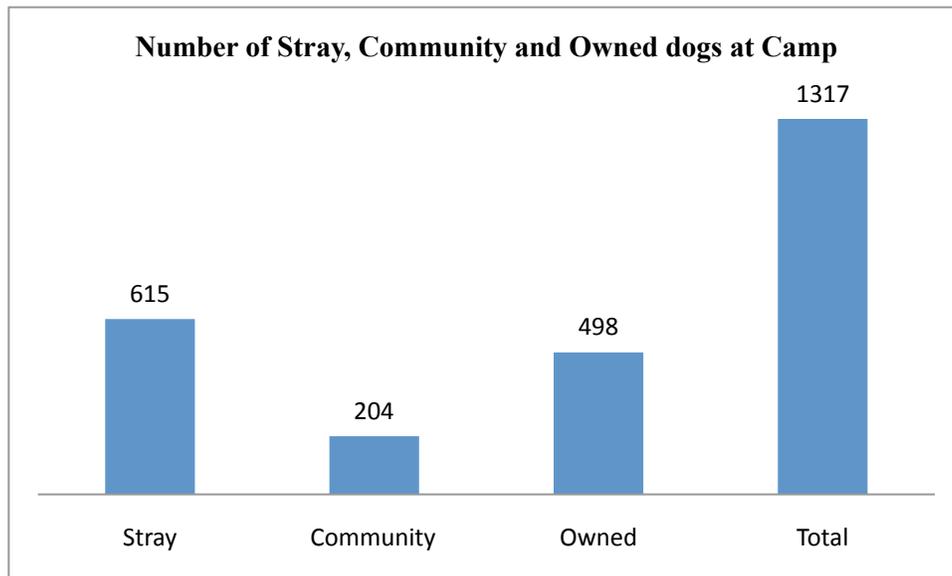
Area	Date	Type of dog			Male	Female	Total
		Stray	Community	Owned			
Kalanki	June 28 & 29, 2012	35	20	40	64	31	95
Bafal	July 3 & 4, 2012	40	13	44	59	38	97
Gongabhu	July 6 & 7, 2012	51	17	47	68	47	115
Samakhusi (Children’s Park)	July 10 & 11, 2012	44	11	34	44	45	89
Tripureshwor	July 14 & 15, 2012	59	21	37	73	44	117
Thankot	July 18, 2012	37	19	26	41	41	82
Mathatirtha	July 21, 2012	27	9	28	27	37	64
Koteshwor	July 24 & 25, 2012	41	18	37	54	42	96
Chabahil	July 29, 2012	29	8	38	38	37	75
Boudha	August 1 & 2, 2012	61	14	28	69	34	103
Balkhu	August 4, 2012	35	9	26	45	25	70
Swoyabhu	August 6 & 7, 2012	47	19	27	51	42	93
Satdobato	August 9, 2012	39	8	35	53	29	82
Baluwatar	August 11, 2012	28	7	24	34	25	59
New Baneshwor	August 13, 2012	42	11	27	46	34	80
Total		615	204	498	766	551	1317

In the table, only the male population who got calcium chloride dihydrate injection per testis were presented. Some of the owner who brought their male dogs at our camp took them back to

their home as they were not interested in the non surgical castration. Females were also presented in table as all of them got Anti-Rabies Vaccine.

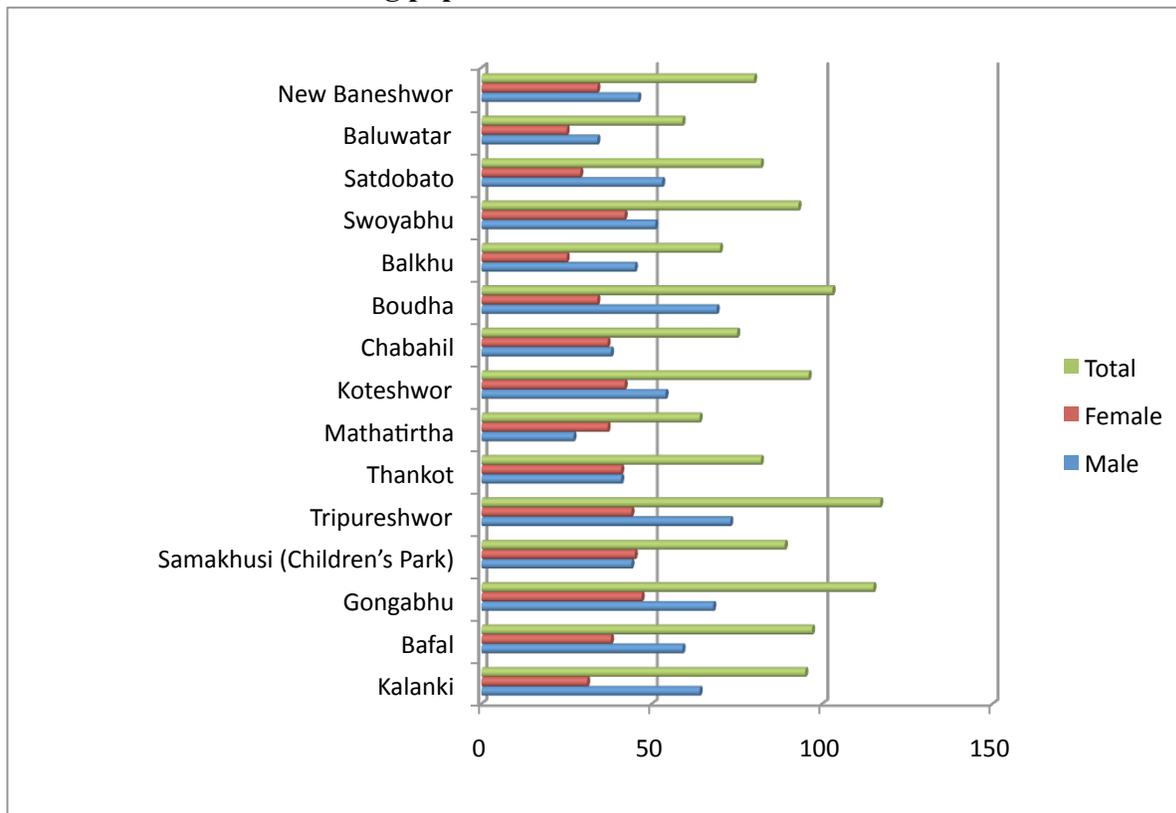


Male	Female
766	551



Stray	Community	Owned	Total
615	204	498	1317

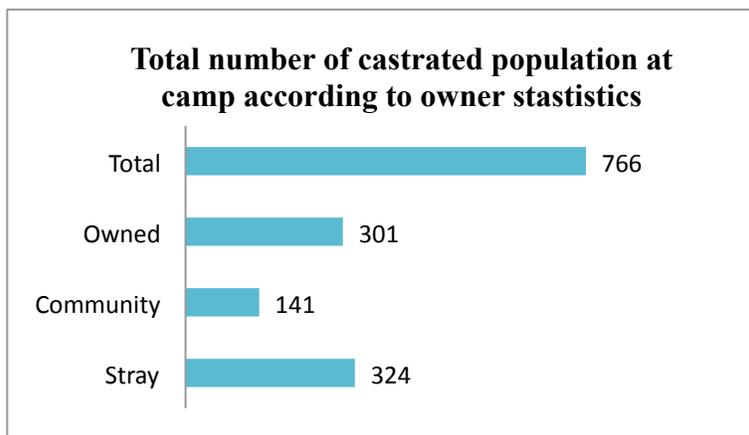
Area-wise distribution of dog population



Area	Male	Female	Total
Kalanki	64	31	95
Bafal	59	38	97
Gongabhu	68	47	115
Samakhusi (Children's Park)	44	45	89
Tripureshwor	73	44	117
Thankot	41	41	82
Mathatirtha	27	37	64
Koteshwor	54	42	96
Chabahil	38	37	75
Boudha	69	34	103
Balkhu	45	25	70
Swoyabhu	51	42	93
Satdobato	53	29	82

Baluwatar	34	25	59
New Baneshwor	46	34	80

Total number of castrated population at camp



Area-wise castrated population

Area	Stray	Community	owned	Total
Kalanki	19	14	31	64
Bafal	21	8	30	59
Gongabhu	29	11	28	68
Samakhusi (Children's Park)	17	9	18	44
Tripureshwor	37	14	22	73
Thankot	17	11	13	41
Mathatirtha	8	6	13	27
Koteshwor	25	11	18	54
Chabahil	10	9	19	38
Boudha	43	9	17	69
Balkhu	20	6	19	45
Swoyabhu	20	13	18	51
Satdobato	24	6	23	53
Baluwatar	15	5	14	34
New Baneshwor	19	9	18	46

Total	324	141	301	766
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Follow-UP

Follow up was done only for the community and owned dogs. All the details with contact number of the owner was recorded and follow up was done. Visit was done as schedule of one, three and seven weeks after the camp. Truly speaking, stray dogs were not examined during that time.

Side-Effect

No side effects were noticed except restlessness for few days. Some of the dogs had swollen testicles. No other pronounced complaints were found.

Continuation of NSS

Yes, of course we are interested in continuation of Calcium Chloride NSS now. There are a lot of street dogs in Kathmandu and we will be happy if we reduce their number and save many more lives to come. Also, we don't want to replace the Lidocaine with alcohol as chances of getting pain are more while injecting into testicles.

Castration before

Only surgical method of castration was done previously.

What made it try Calcium Chloride

There is a large number of dog population inside and outside of the valley. Due to this many dogs and also humans get injured in the road accidents, causing local and authorities furious at the stray dogs. And also a lot of complaints of the residence of noise at night in and around Kathmandu. The Kathmandu Metropolitan City head office does mass killing of strays. So by doing NSS we are being able to control the population and also save lives.

Behavioral Change

The main behavioral change we noticed was docility.

Community Reaction

Community people were actively engaged in our camp. They were happy that such methods are there to perform sterilization and asked many questions. Such as why was this not done before?

Is there anything like such for female dogs? Basically, wherever we had our campaign we got a positive feedback.

Preparation

Calcium Chloride Dihydrate was dissolved in 2% Lidocaine.

Brand of Calcium Chloride Dihydrate

Trade Name: CDH

Batch Number: 9359 (500gm)

Product Number: 027584

Manufacturer: Central Drug House (P) Ltd., Bombay-New Delhi.

Composition

20% Calcium Chloride dihydrate was prepared using 2% Lidocaine (For eg. For every 1gm of Calcium Chloride dihydrate, 5 ml of 2% Lidocaine was added.

Preparation and Mixing

Preparation was done at well equipped government laboratory, Central Veterinary Laboratory (CVL), Tripureshwor, Kathmandu as Doctor involved in our camp works there.

Equipments

Digital Weighing balance,

Borosil glass container,

glass rod, aluminium foil,

autoclave machine

Filters

Dosage

The dosage was calculated according to how testis look like, it's feeling and using simple scale. Dose was determined for individual dogs as per following

Testicular Width Dose per testicle

10-14mm	0.25ml
15-18mm	0.5ml
19-22mm	0.8ml
23 and above	1ml

Injection site

Caudal end of each testis.

Manpower

Only two veterinary doctors were injecting the solution. Para vets were also involved but for better restraining and helping the vet doctor. We had also hired five people on wages basis to catch stray dogs.

Effectiveness

Truly speaking, NSS was of immense important in country like Nepal as there are a lot of stray dogs. The main demerit we found is difficulty in follow up. Follow up was possible only for some community dogs and all owned dogs but not for stray dogs. Even though we are happy enough by seeing the result of NSS in owned dogs. As per time constrain, follow up was still going on to the dogs that were given injection on the month of August.

Lesson Learnt from NSS

Though the easy method, it needs a lot of patient and regularity. Lots of trained manpower in catching the dogs are essential otherwise impossible to accomplish the work. Before starting the camp it is better to inform the general public about the merits and demerits of the Method so that they themselves decide for the involvement in campaign (Volunteer).

PHOTOGRAPHS

Preparation of the solution for NSS



NSS Pictures:



APPENDIX: THE QUESTIONS ASKED

This report by DREAMS was in response to the following questions:

THE BASICS

- About how many dogs do you think you've done, and over about what timeframe? (Weeks/months?)
- What type of dogs have they been-- free-roaming/market dogs, neighborhood dogs, owned farm/guard/pet dogs, or a combination?
- What sort of follow-up has there been? Don't feel bad if it's not a lot; we understand the reality that field work is not easy. It could be anything from "We checked them twice a day every day in our shelter" to "We've heard back from some of their owners" to "People have seen some of them around the market square and they seem fine." What did you see, or what feedback did you get?
- What sort of side effects have been seen, if any? For example, it's typical for the testes to be slightly tender for a few days, and swollen for a few days (or even a week or two). If there were any other side effects, what was your impression of how common they were? We know what calcium chloride is like in controlled studies and the laboratory, but we're really interested in how it is in typical field use.
- Are you continuing to do calcium chloride nonsurgical sterilization injections now? Why or why not?

BEHAVIOR

- Were you castrating (neutering) dogs before this? Why or why not?
- What made you decide to try calcium chloride-- was it for population reasons, or behavior reasons, or both?
- What was your impression, if any, of dog behavior after calcium chloride? If you'd been doing castration neutering before, how did the behavior afterwards seem similar or different from after castration neuter?
- What sort of community reaction has it gotten, if any?

SPECIFICS

- What did you dissolve the calcium chloride in, alcohol or lidocaine? If alcohol, what type of alcohol/ what strength (for example, 95% / 190 Proof grain alcohol)?
- What was your source/brand for the calcium chloride powder?
- What was the mixture you used (the proportion of ingredients)?
- How did you mix it? For example, on the table in our office with some of our veterinary glassware (details please), in the kitchen at home in a glass washed in hot water and then mixing with a spoon (details please), or a friend at the university mixed it up for us in his/her laboratory, or we requested it from the compounding (custom) pharmacist.
- What did you do about sterility? For example, did you get it from a source that you think would be sterile? (For example, if a colleague made it under a laminar flow hood at the university, or a well-equipped pharmacy made it.) Or did you buy syringe filters? (In which case, did you filter each time you did an injection, or just once before putting a larger quantity in a bottle?) Or did you figure probably not much bacteria would grow in alcohol and calcium chloride, and try to mix it in clean conditions, and hope for the best?
- How did you decide dosage for each dog? For example, did you use the chart in the recipe the Greenbaum Foundation sent, or did you start with the recipe but then modify how much you put in based on how full the testis looked and felt, or did you use the same amount for every dog, or did you use some other method for deciding dosage?
- Where in the testes are you injecting it?
- How many people are doing the injections, and if it's more than one, have you gotten any impression of whether they all get equal results or some people seem to produce better results or have better technique?

EFFECTIVENESS

- It sounds like you are pretty happy with it. If you get the sense that it is working well, what gives you that sense? (For example, behavior, or the look of the testes, or the feel of the testes, or something else.)
- Have you been able to follow up or track the dogs enough to be able to tell whether it works in all dogs consistently, or only most dogs? For example, were there any dogs you had to give a second injection because the first one didn't work?

SUMMARY

- If another group is considering using calcium chloride for injectable nonsurgical sterilization, what are the most important things you've learned about it that you'd want them to know? This is your chance to help others learn from your knowledge.