WORKING WITH COMMUNITIES ON CANINE POPULATION MANAGEMENT IN TODOS SANTOS, GUATEMALA

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Todos Santos: the issues

- Group of Mayan communities in the Cuchumatan mountains in Northwest Guatemala.
- Approx. 30 000 people in mountainous region at 8000ft
- Small crop, subsistence farming, with many people leaving to work on sugar cane and coffee plantations.
- Dogs are an integral part of the Mayan livelihood: guarding homes, crops and farm animals.
- Free-roaming dogs becoming a safety concern, especially at night and dog bite incidence was increasing. Tourism was being negatively affected.
- Culling campaigns are common place and often kill owned, non-target dogs. No veterinary services are available within 2 hours of Todos Santos.

Purpose and Objectives

Purpose #1 : Develop and implement a community based canine population management program

Purpose #2 : Provide data with regards to interest and acceptance of canine chemical castration by community members (dog owners) and complication rates associated with chemical castration using an intratesticular injection of zinc gluconate neutralized by arginine (EsterilSol™).**

Methodology

From August 2007 until February 2010:

1. Community outreach: meetings and presentations to municipal government, community leaders, schools, Guatemala public health and rabies authorities and veterinary university.
2. Household Surveys: In May and December 2008, June and November 2009 and January 2010, household surveys were conducted in all 12 study communities.
3. Mark-Recapture studies using vegetable dye (red) over 4 day periods in: March 2008, January 2009 and June 2009, and January 2010 to estimate stray dogs
4. Health clinics and Sterilization: In January and Nov-December 2009 , a total of 4 weeks of mobile clinics took place in the 12 communities.

-488 dogs received physical exams, vaccination for rabies if needed, application of Revolution®, and education on improved nutrition and care for their dogs.
-158 male dogs received EsterilSol™ injections
-44 female dogs were sterilized by surgical ovario-hysterectomy

Results and Outcomes

Owner willingness to sterilize their dogs (May 2008):

- Approximately 87% of respondents indicated they would be willing to chemically sterilize their male dog (s)
- Approximately 91.5% of respondents indicated they would be willing to chemically sterilize their female dog (s) if available

Percentage of owned dog population sterilized based on household surveys (Jan 2010):

- 59.2% of male dogs aged > 5 months
- 42.1% of female dogs aged > 5 months

Female to Male ratios of dogs in the 12 study communities stayed at approximately 1:3 during the 2 year study period.

Owned dog population: Household surveys (January 2010) indicated there were 292 owned dogs (a **30%** reduction from May 2008) (Figure 1)

Table 1: Owned dog populations based on household surveys

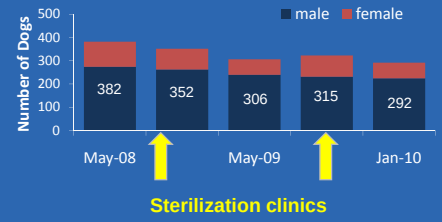
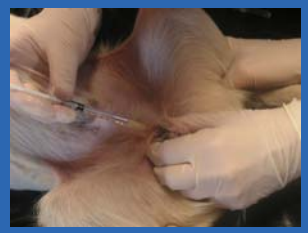


Table 1: Post-sterilization (Phase 1) owner satisfaction and complication survey results

Satisfaction of owners with chemical castration (Phase 1)	Respondents willing to pay for sterilization in future	EsterilSol™ Complication rate Phase 1 and 2 (within 72hrs)	Change in behaviour after chemical castration
98% (121/124) Reasons why unsatisfied: pain after procedure and change in guarding behaviour	88% (100/114) Willing to pay between 15-30Q ($2-6$USD) per dog	1.3% (2/158) One case resulted in surgical scrotal ablation, and one was a mild dermatological reaction treated medically	8.1% (10/124) Changes reported such as increased aggression towards humans and dogs, increased and decreased roaming behaviours, etc

Discussion and Conclusion

- Community based programs with extensive communication and media (involving the public, community leaders and municipal government) may be critical in the success of these types dog population management programs.
- The sterilization campaigns may not have been the singular cause of reduction in population of owned dogs, as local culling may have influenced the results as well as normal population turn-over.
- The EsterilSol™ injection complication rate was lower than that previously published (Levy, et al. 2008)***. This may be a result of procedure and technique.
- EsterilSol™ may provide a slightly less expensive and more culturally acceptable method of male sterilization, however care must be taken to observe the dogs 72 hours post castration for possible complications.



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*****JK. Levy et al.** Comparison of intratesticular injection of zinc gluconate versus surgical castration to sterilize male dogs. AM Vet Res. 69(1): 140-3. 2008

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