

CURRENT CONTRACEPTIVE APPROACHES FOR FERAL CATS



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Feral and stray "community" cats


- Exist worldwide in all environmental niches
- Sympathetic citizens offer food and comfort
- US households feed free-roaming cats they do not own
 - ☑ 26% Ohio
 - ☑ 12% Florida
 - ☑ 9-10% California
 - ☑ 8% Massachusetts
- Control policies must consider public sentiment



Cat population control



- Objectives
 - ☑ Enhancement of cat welfare
 - ☑ Protection of public health
 - ☑ Environmental protection
 - ☑ Nuisance control
- US cat population
 - ☑ 88 million pet cats
 - ☑ 10-90 million "community cats"



	Owned Cats	Feral Cats
Percent female	50%	50%
Sterilization rate	85%	2%
Litters per year	1.5	1.5
Kittens per litter	4	4
Kittens per cat annually	0.3	2.9
U.S. cat population	88 million	50 million
Total kittens born annually	26 million	145 million

Reproduction specialists

(Wallace JFMS 2006)

Estimating community cat numbers

- Alachua County, FL
 - ☑ Humans 246,000 (www.census.gov)
- Pet dogs
 - ☑ Human population ÷ 4 = 56,000
- Pet cats
 - ☑ Human population ÷ 3.3 = 68,000
- **Community cats**
 - ☑ Human population ÷ 6 = 41,000
- Operation Catnip sterilizes 3,500 cats/year

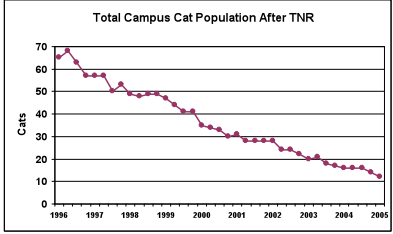
Inhumane & ineffective solutions



High-quality high-volume neutering



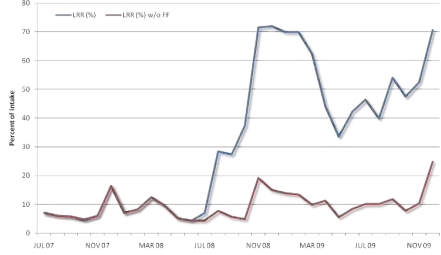
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Year	Cats
1996	70
1997	65
1998	55
1999	50
2000	45
2001	40
2002	35
2003	30
2004	25
2005	20

-- Levy et al, JAVMA, 2003

Saving lives: Feral Freedom, Jax FL



Date	LRR (N)	LRR (N) w/ FF
JUL 07	5	5
NOV 07	15	15
MAR 08	10	10
JUL 08	30	10
NOV 08	70	20
MAR 09	65	15
JUL 09	45	10
NOV 09	70	25

Advantages of surgical sterilization

- Predictable, immediate, and permanent
- Behavioral and medical benefits




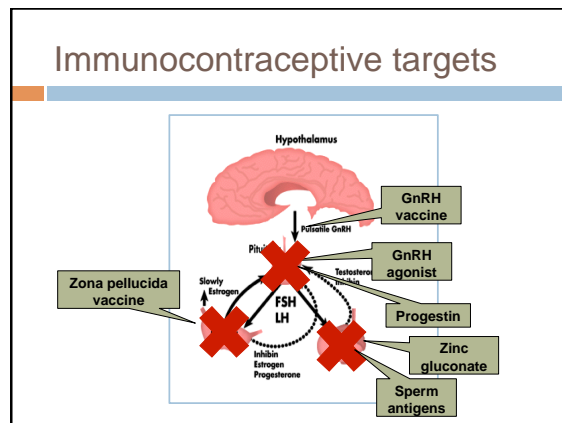
Limitations of surgical sterilization

- Requires anesthesia
- Invasive, has some morbidity and mortality
- Technical and expensive
- Not available in much of the world




Nonsurgical contraception

- Delivery and targeting
- Time to contraception
- Duration of contraception
- Hormone production
- Effectiveness
- Sex and age
- Safety
- Identification of treated cats
- Cost

What's new?

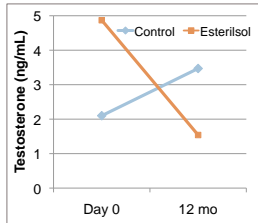


- Contraceptive drugs
 - ☑ Zinc gluconate
 - ☑ Megestrol acetate
 - ☑ Zinc gluconate
 - ☑ Azagly-nafarelin
 - ☑ Deslorelin
- Contraceptive vaccines
 - ☑ Zona pellucida
 - ☑ Gonadotropin releasing factor

Zinc gluconate


Ark Sciences

- Esterilsol
 - ☑ Intratesticular injection licensed for dogs
 - ☑ Sclerosis of testes
 - ☑ Reduces testosterone, but not as much as castration
- 115 cats treated at 6 months of age
 - ☑ Heavy sedation
 - ☑ Dosage 0.3-0.4 mL/ testes
 - ☑ Testicular atrophy
 - ☑ No sperm




Time	Control (ng/mL)	Esterilsol (ng/mL)
Day 0	~2.2	~4.8
12 mo	~3.5	~1.5

FeralStat®



- Megestrol acetate progestin hormone
- Powder put in food of female cats weekly
- Not licensed for contraception in cats
- Old product Ovaban (higher dose) associated with diabetes, mammary cancer, pyometra
- \$67 for 4 months (1-81 cats)



Azagly-Nafarelin

Schering Plough/Intervet France



- Gonazon®
 - ☑ GnRH agonist
 - ☑ Delivered by implant (microchip size)
 - ☑ Can be used on any age and can be repeated
- Approved in EU for 1 year contraception in female dogs
- Off-label uses
 - ☑ Also contracepts male dogs
 - ☑ 3.5 year duration of effect in female cats


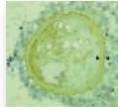

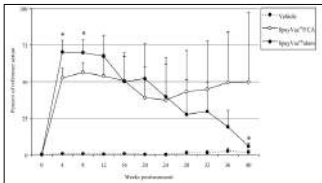
Deslorelin

Peptech Animal Health




- **Suprelorin®**
 - ☑ GnRH agonist
 - ☑ Delivered by implant (microchip size)
 - ☑ 6-month duration
 - ☑ Can be used on any age and can be repeated
- Approved in Australia and New Zealand for contraception in male dogs.
- Off-label uses
 - ☑ Also contracepts female dogs
 - ☑ Also contracepts male/female cats

SpayVac pZP in cats

GnRH vaccine


Pfizer Animal Health



- **Canine Gonadotropin Releasing Factor Immunotherapeutic®**
 - ☑ First GnRH (immunocontraceptive) vaccine conditionally approved in U.S.
 - ☑ Licensed for treatment of benign prostatic hyperplasia (BPH) in male dogs
 - ☑ Will result in infertility
 - Off-label use
 - Most likely also effective in cats
 - ☑ Duration of contraception unknown
 - Label recommends booster vaccine every 6 months

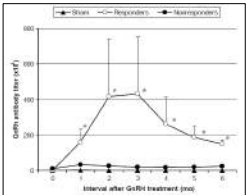
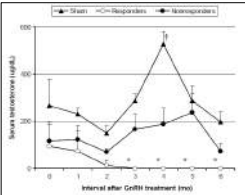
GonaCon vaccine

National Wildlife Research Center




- Synthetic GnRH
- KLH carrier protein
- *Mycobacterium avium* with oil in water adjuvant (diluted Mycopar)
- Single intramuscular injection
- Efficacy in horses, bison, pigs, wolves, rats, squirrels . . .
- EPA-licensed for use in deer

GonaCon in male cats


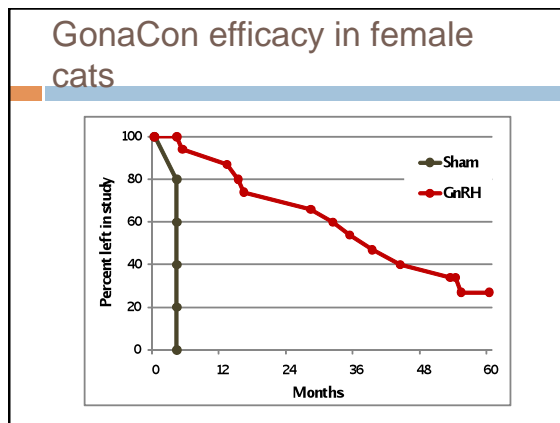



GonaCon in male cats



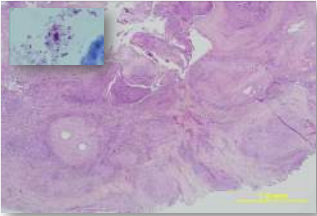
GonaCon in female cats

- 5 controls
- 15 vaccinates
- Single dose GonaCon vaccine
- Monthly measurements
 - ☑ GnRH titers
 - ☑ Estrogen, progesterone
- 5-year follow-up







Injection-site reactions

Late onset – 24+ months
6/20 cats – all responders



Regulatory authority: Contraceptive vaccines

- United States Department of Agriculture
 - ☑ Regulates vaccines against animal diseases
 - ☑ Pregnancy is not a disease
- Food and Drug Administration
 - ☑ Regulates animal medications
 - ☑ Would regulate contraceptive vaccines for pets and livestock
- Environmental Protection Agency
 - ☑ Regulates pesticides
 - ☑ Would regulate contraceptive vaccines for wildlife and "pest species"
 - ☑ EPA-registered products could be given to feral cats but not pet cats

The Michelson Prize and Grants in Reproductive Biology

- **The Michelson Prize in Reproductive Biology**
 - ☑ \$25 million for innovation in non-surgical sterilization for cats and dogs
- **The Michelson Grants in Reproductive Biology**
 - ☑ Up to \$50 million of grant funding available for research directed in pursuit of a safe, effective, and practical non-surgical sterilant for cats and dogs



www.foundanimals.org



UF Maddie's® Shelter Medicine Program
College of Veterinary Medicine
UNIVERSITY of FLORIDA

Maddie's Fund®
The Pet Rescue Foundation

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