A roadmap for using fertility control inhibitors for dog population management

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From the laboratory to the field

- Linking animals with products: why different dogs need different contraceptives?
- Fertility control for managing dog populations: lessons learned from wildlife management:
- A proposed framework to use fertility control in dog population management

1st International Conference on Dog Population Management

DPM2012@fera.gsi.gov.uk

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Why different dogs need different contraceptives?

Confined *vs.* roaming dogs	Type of contraceptive
Accessibility	Single vs. multiple doses, timing of administration during cycle
Life span and health	Permanent vs. temporary sterilization
Reproduction planned	
Reason to sterilize	Individual behaviour, population control

fetchinfo.wordpress.com

Fertility control for different dogs

Confined *vs.* roaming dogs	Type of contraceptive
Side effects of fertility inhibitors	Acceptance: individual or population
Effectiveness & duration of infertility	100% effective or predictable duration and effectiveness at population level
Cost	Met by owners or by others

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Meet ICon™, the ideal contraceptive …

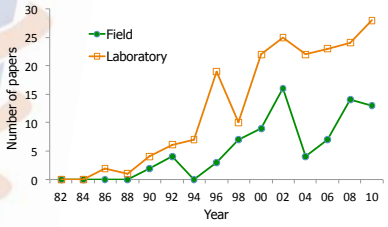
- Injectable, 1-2 doses
- No unacceptable side effects
- Effective in the long-term
- No interactions with other drugs
- Inexpensive to produce
- Registered for companion animals

Laboratory

Practical applications

Lessons learned from wildlife management

Papers on fertility control for wildlife



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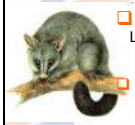
Lessons learned from wildlife management

- Immunocontraception on populations of horses and feral goats: reduced pop size, no negative side effects, enhanced survival

Turner & Kirkpatrick 2002, Kirkpatrick &Turner 2008, Cowan in prep.



- Possums: sterilised males < home range
  Leptospirosis transmission < by 63-88% due to < contact rate

Ramsey et al. 2007

- Tubally ligated but hormonally competent females extended breeding seasons and attracted > males than controls

Ji et al. 2000

- Ring-tailed lemurs : contraception alters olfactory cues that signal fertility, individual chemical "signature"and relatedness, and may disrupt social interactions, kin recognition and mate choice

Crawford et al. (2011)

Lessons learned from wildlife management: fertility control from individuals to populations

- Proportion of population that must be targeted to achieve the goal?
- How feasible to reach goal in time?
- How long will it take?
- Long-term effects on welfare and survival?
- Do fertility inhibitors affect behaviour?
- What are the costs?
- Can costs be sustained?

Hobbs et al 2000, Bradford &Hobbs 2008

Lessons learned from wildlife management: fertility control from individuals to populations

- SMART goals: Decrease population size?
  Disease control/elimination?
  Decrease impact by dogs?
- Effectiveness
- Humaneness
- Costs
- Public support and response
- Feasibility
- Sustainability

Adding the human component

- Integrating education and fertility control
- Increased "immigration"?
- Costs of contraceptives/sterilants met by "owners"?
- Alternatives to fertility control?




A framework to use fertility control in DPM

Is FC of dog populations socially acceptable?
↓
Are the side effects acceptable?
↓
Are effectiveness + longevity of infertility known?
↓
Does modelling suggest that the goal will be achieved?
↓
Can a drug be legally acquired and used?
↓
Is dog accessibility adequate to meet goals?
↓
Are all the costs covered by the budget?
↓
Implement, monitor and check results against target

Massei & Miller (submitted)

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Conclusions


- Different dogs (owners, contextx) require different fertility control inhibitors
- Collaboration between ecologists, veterinarians and stakeholders will ensure the transfer of tools and methods from wildlife management to dog population management
- A framework of criteria could inform decisions on the use of fertility control in dog population management

Thank you ACC&D !!!

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