

The Science: What Approaches Have the Most Promise for Pet Population Control?



What Do We Need for Dog and Cat Population Control?

- Safe
- Effective
- Single treatment (injection, implant)
- Permanent and/or long-term



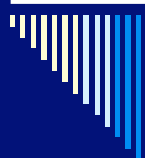
Science (Biology) vs. Products

- Regulatory approval
- Manufacturing (cGMP)
 - Reproducible
 - Scale up
 - Stability
- Distribution and Cost
- Risk/Benefits
- Practicality



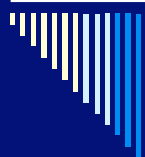
What Do We Have?

- Drugs
 - GnRH agonists (approved)
 - Zinc gluconate (approved)
 - VCD (dogs, early stage)
- Vaccines
 - Gonacon for cats (early stage)



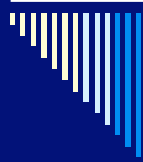
What About the Rest of the Stuff?

- Drugs
 - GnRH antagonists not under commercial development
 - Kisspeptin – a target not a drug
- Vaccines
 - PZP doesn't work in dogs (?) and cats; no effect on behavior; only females
 - GnRH vaccines – 30 years of research, still no dog product; not under commercial development
 - LH receptor – early stage dogs (cats?) not under commercial development



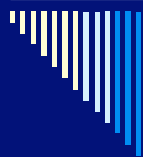
What Do We Have? More Details

- GnRH agonists (Peptech and Intervet)
 - Intervet data on implant in cats showing three-year suppression of fertility
 - May be a valuable tool for feral cats?
 - In dogs, 12-month duration, some limited shelter setting application (?)
 - May be useful in crisis situations (e.g., Katrina)



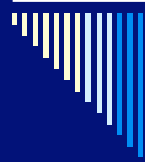
What Do We Have? More Details

- Zinc gluconate (Neutersol) – male sterilant
 - Approved in the U.S.
 - Safe and effective
 - Easier and cheaper than surgery
 - Proven field usefulness in Mexico
 - Promising international tool for population control



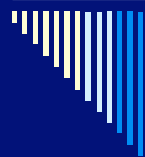
What Do We Have? More Details

- VCD – female sterilant
 - Very early stage research
 - Industrial chemical causing permanent follicle depletion in the ovary
 - Preliminary dog data (target population) promising
 - Multiple injections need to be simplified
 - Dose needs to be reduced
 - Next steps: formulation development



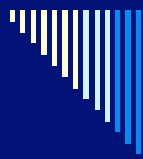
What is Unlikely to Work for ACC&D?

- Bait
 - Environmental issues
 - Human exposure
 - Technical issues
- PZP
 - Only for females
 - No suppression of sexual behavior
 - Species specificity



What is Unlikely to Work for ACC&D?

- Short-acting approaches
 - 6-12 month GnRH agonists for dogs
- Multiple injections
 - Vaccines needing repeat injections
- Viral vectors
 - Technical difficulties
 - Environmental concerns



Hope for the NEAR Future: News at This Meeting

- Intervet data on three-year effectiveness in suppressing fertility in female cats with one implant
- Gonacon data: 75% effectiveness in female cats with single-shot suppression of fertility for several years
- Zinc gluc effectiveness in large numbers of dogs in Mexico