

# Egg Production in the Raccoon Roundworm, *Baylisascaris procyonis*



Gabriel Ruelas<sup>1</sup>, Sara Weinstein<sup>2</sup>

1. Ventura College 2. Department of Ecology, Evolution & Marine Biology, UCSB

## Introduction

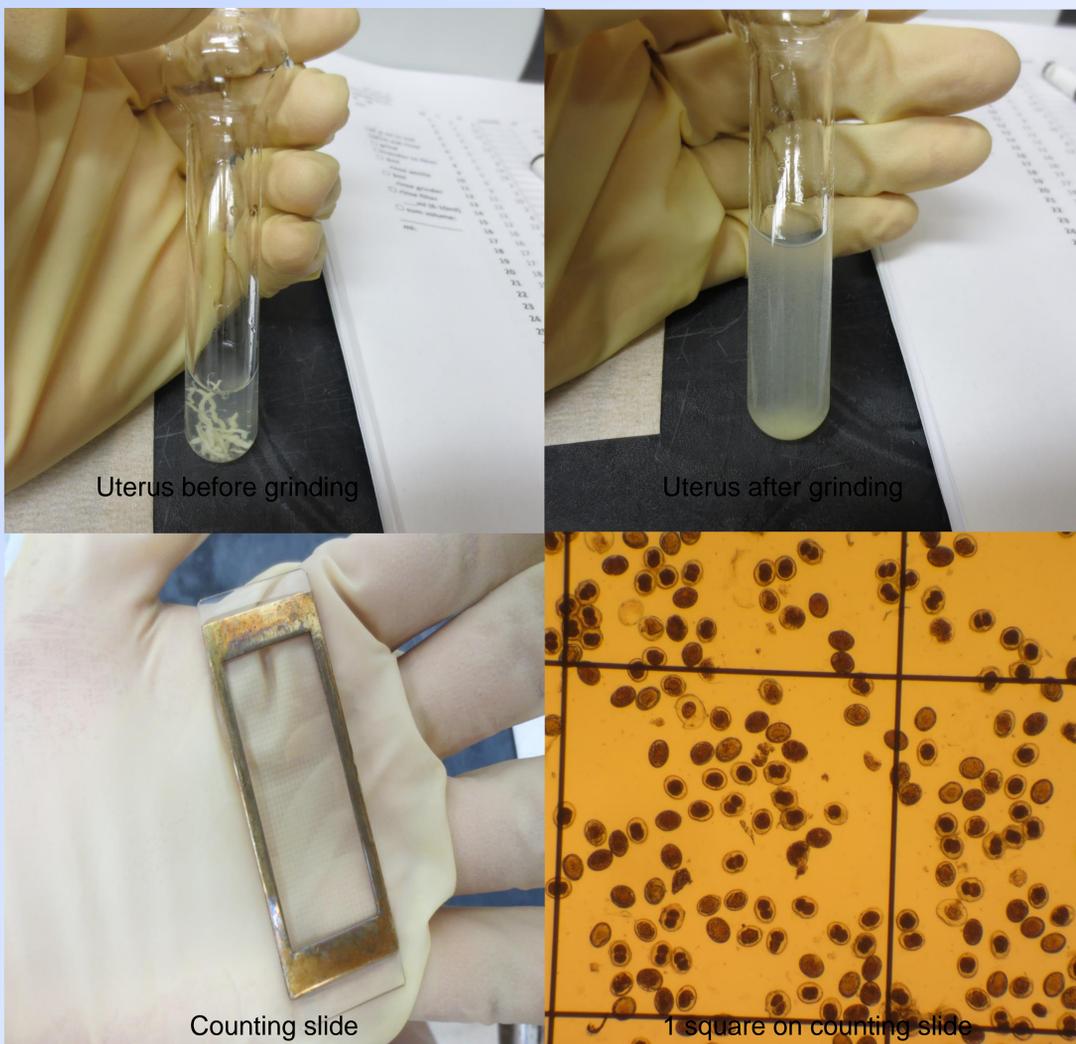
The raccoon roundworm, *Baylisascaris procyonis*, is a parasitic nematode that matures in raccoons (*Procyon lotor*). The larval stage of this parasite is capable of infecting humans, causing a potentially fatal disease known as Baylisascariasis, which has recently been recognized as an emerging zoonosis. In raccoons, individual worms can produce extraordinary quantities of eggs and it is these eggs that are infective to humans and other wildlife. It has been shown that heat treating the eggs at 62°C causes loss of viability (Shafir et al., 2011). A variety of factors may lead to variation in the number of eggs produced by an individual worm; the purpose of this research is to determine the relationship between female *B. procyonis* length and weight, uterus weight and egg production. Additionally, we want to know what effects heat treatment has on total egg quantities.

## Questions

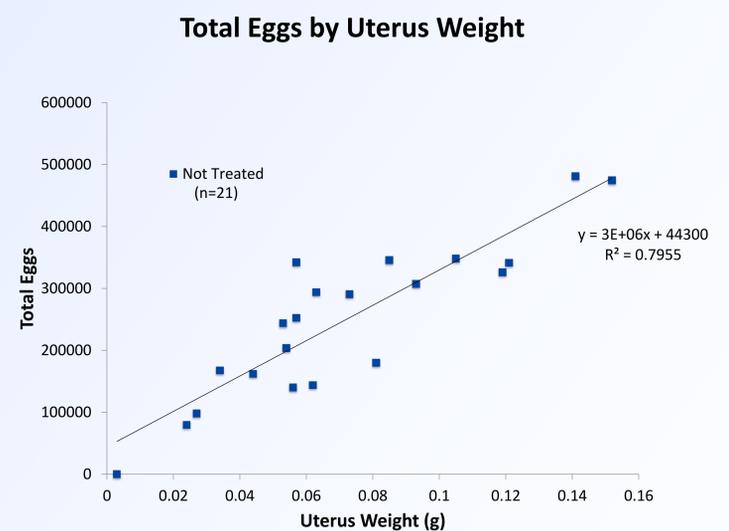
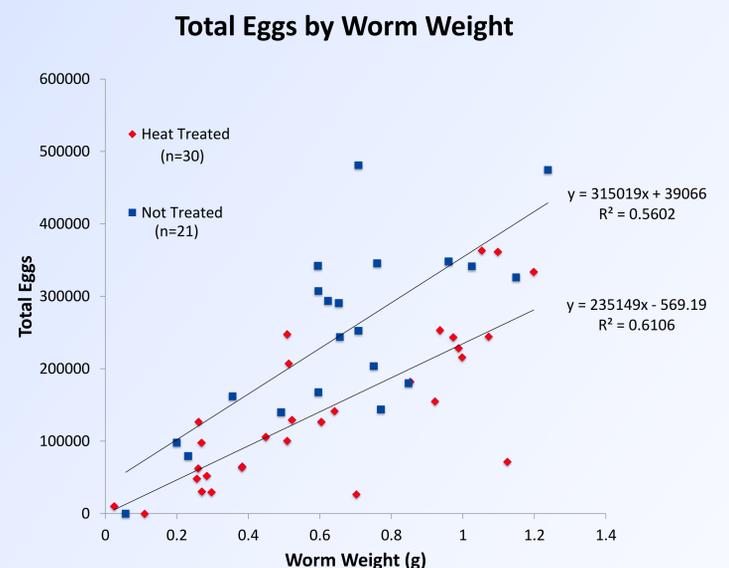
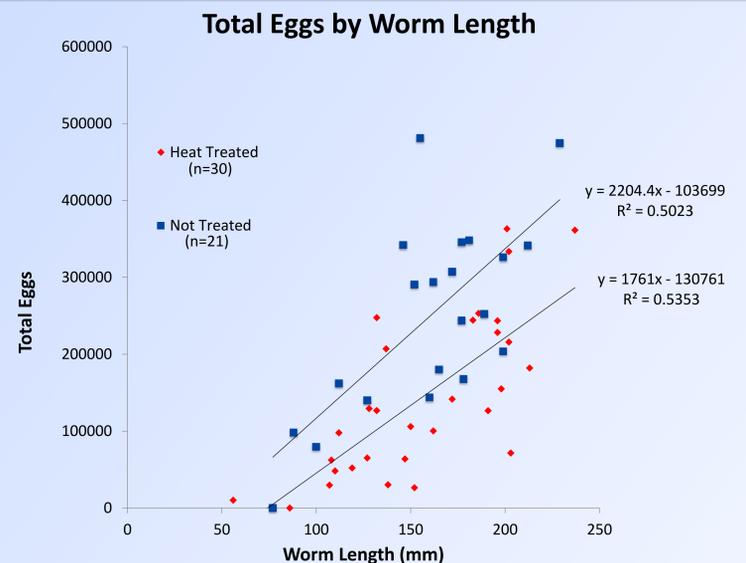
- Is there a relationship between...
- Worm length and egg production?
  - Worm weight and egg production?
  - Uterus weight and egg production?
  - Heat treatment and egg quantities?

## Methods

1. Worm is extracted from the raccoon
2. Female worm is measured and weighed
3. The uterus is extracted from the worm & weighed
4. Uterine tissue is ground up in a tissue grinder
5. Egg containing solution is run through a filter
6. 1mL of solution is placed on a counting slide containing 1,000 1µL squares
7. 60 square subsample is counted
8. Data is collected & analyzed



## Results



## Conclusion

- Was there a relationship between...
1. Worm length and egg production? **Yes**
  2. Worm weight and egg production? **Yes**
  3. Uterus weight and egg production? **Best Indicator**
  4. Heat treatment and the total egg quantities? **Yes**

Understanding the factors that control egg production in this parasite will help determine the potential for roundworm infection among animals as well as humans and ultimately increase our understanding of transmission and spillover of zoonotic disease agents.

## References

Shafir SC, Sorvillo FJ, Sorvillo T, Eberhard ML. "Viability Of *Baylisascaris Procyonis* Eggs." *Emerging Infectious Diseases* 17.7 (2011): 1293-1295. *Military & Government Collection*. Web. 12 Aug. 2013.

## Acknowledgements

I would like to thank Sara Weinstein for being extremely knowledgeable and a great mentor; everybody at the Ecological Parasitology Lab and Malia Rose for continuous support and encouragement in my academic pursuits.

