Size Does Not Matter: The Relationship between Bovine Ovary Mass and Cumulus Oocyte Complex (COC) Yield

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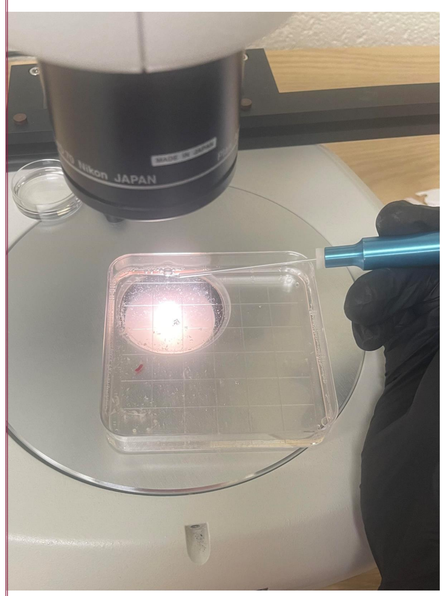
Introduction

Dr. Alan Ealy's IVF Lab slashed bovine ovaries for the collection of COCs (aka the scientific equivalent of eggs) to be prepared for in-vitro fertilization (IVF). My hypothesis was that bigger ovaries, in comparison to smaller ovaries, would contain more follicles, and yield a greater number of COCs. Under the supervision of Mary Ali Oliver, one of Dr. Ealy's graduate students, I sorted ovaries into two groups by mass- small and big. I repeated the steps of COC collection, and gathered data based these variables.

Procedure

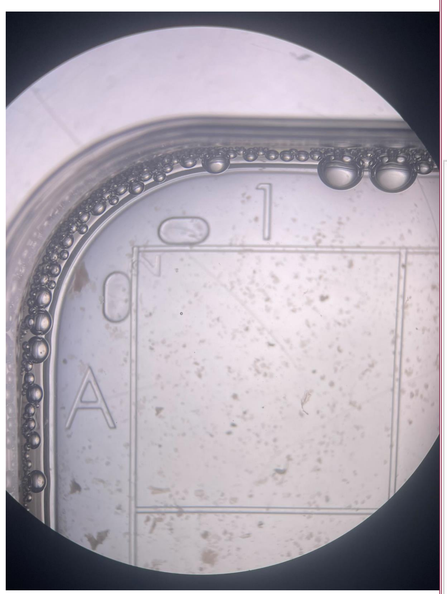
After rinsing 20 ovaries in bovine maturation medium, weighing them, and assigning the smallest five and the largest five ovaries. I "slash" the ovaries by slicing their surfaces in multiple directions and immerse them into a beaker with the medium.

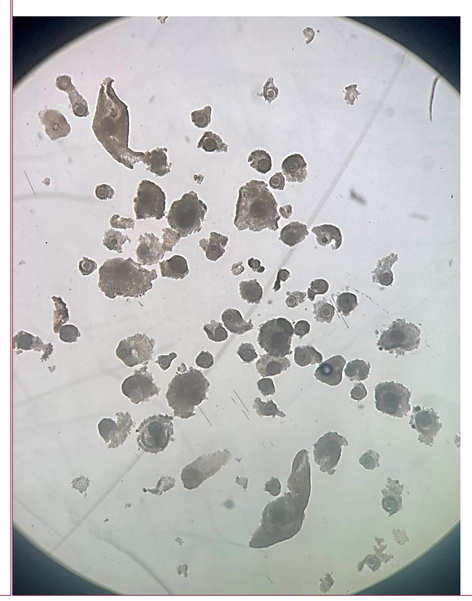
For the purposes of this study, I predominantly used a separate set of equipment and repeated steps for each group, respectively.



The filtered remains were placed into a Petri dish and viewed under a light microscope. A captrol is a tool to displace the COCs from one Petri dish to another.

The grids of the Petri dish help with scanning the entire plate. There is a fair amount of debris to search through to find COCs.



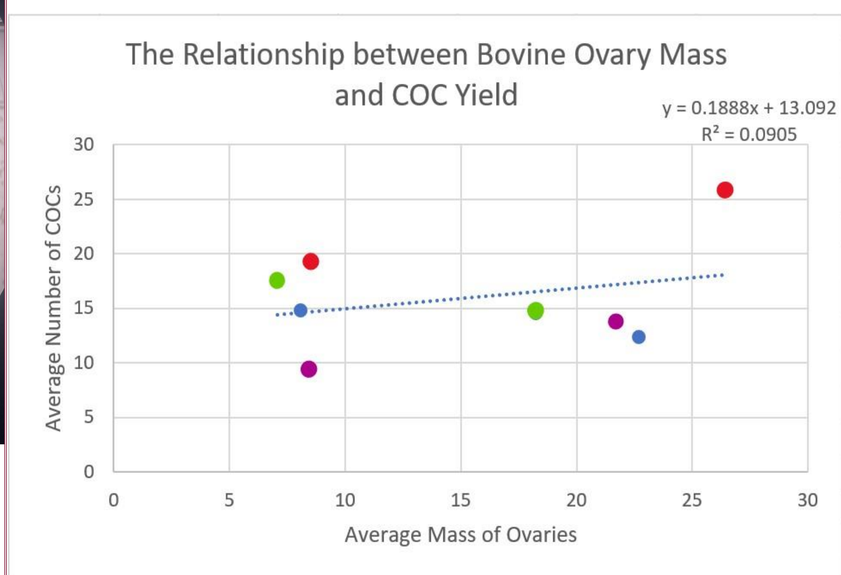


After COCs were collected and isolated into their own, smaller Petri dish, they can finally be counted.

Results

week 3 (2/28)		
	small ovaries	large ovaries
masses (g) ->	5.6	25.45
	7.86	21.38
	9.13	17.29
	8.94	25.39
	8.83	23.87
average mass (g) ->	8.072	22.676
COC count ->	74	62
avg COCs per ovary	14.8	12.4

This is a sample of data from one of the trials. I combined the average masses and number of COCs, and I used them as plot points to see if there is a relationship between these two variables.



My research showed that there is no relationship between the mass of bovine ovaries and the number of COCs collected.