EPIDIDYMAL SPERM CHARACTERISTICS OF NON-DESCRIPT CATTLE AFTER 8HR AND 12HR TRANSPORT PERIOD AT REFRIGERATION TEMPERATURE

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An Undergraduate Thesis Submitted to the Faculty of the College of Veterinary Science and Medicine, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines in Partial Fulfillment of the Requirements for the Degree of

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BIOGRAPHICAL SKETCH

The author, Luise G. Sudla, was born on January 9, 1997 in Gapan City, Nueva Ecija as the fourth child of Ronilo Tadeo Sudla and Mercedita Guevarra-Sudla. He attended his primary education at Gapan North Central School in Gapan City from 2003 to 2009, secondary education at Juan R. Liwag Memorial High School from 2009 to 2013 and tertiary education at Central Luzon State University from 2013 to 2017 with the degrees Bachelor of Science in Animal Husbandry and Doctor of Veterinary Medicine. The author has been a recipient of Vicente B. Bello Scholarship and a member of Veterinary Honor's Society from 2015 – 2016.

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ABSTRACT

SUDLA, LUISE G., College of Veterinary Science and Medicine, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **June 2019**, **EPIDIDYMAL SPERM CHARACTERISTICS OF NON-DESCRIPT CATTLE AFTER 8HR AND 12HR TRANSPORT PERIOD AT REFRIGERATION TEMPERATURE**

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The study isolated epididymal sperm from post-mortem non-descript cattle and determined its viability in transit, stored at 5 to 10°C for 8 hours (left caudal epididymis) and 12 hours (right caudal epididymis) and after addition of semen extender stored at refrigerated temperature (4 to 5°C) conditions. Specifically, it determined the sperm volume and concentration, the total sperm motility (MOT) using conventional evaluation method, and the percentage of live, dead and abnormal sperm.

Six pairs of testicles from non-descript cattle were collected from a local abbatoir at Baler, Aurora. Morphometric parameters of the testis and epididymis were also determined. Epididymal sperm was recovered using the swim-up method. Sperm motility was determined using conventional method. Percentage live sperm was also determined after eosin-nigrosin staining. Morphological observation for the presence of abnormalities in the spermatozoa was similarly performed. Samples were checked after 24 hours of semen extender addition.

Results revealed that the mean epididymal weight and testicular length, width, thickness and volume of the left cauda epididymides were 4.83g, 15.17cm, 6.92cm, 4.42cm and 242.78 cm^3, correspondingly while those of the right cauda epididymides were 5.08g,

14.58cm, 6.75cm, 4.42cm and 228.00 cm^3, respectively. Results showed that there was a decline in epididymal sperm volume and concentration from 277.5 µL to 220.83 µL and from $1.28x10^9$ to $1.05x10^9$, respectively after prolonged storage in refrigerated temperature conditions. Sperm motility was reduced 25.83% to 12.50% for 8hpm samples and from 26.67% to 10.00% for 12hpm samples even after the addition of semen extender at refrigerated temperature. There was also a noticeable decrease of live sperm to 50.50% for 8hpm and 45.83% for 12hpm at the refrigerated temperature. The most frequent type of epididymal sperm abnormality found in this study was cytoplasmic droplet, while the least was detached head. From all measured parameters, post-mortem epididymal sperm in transit at 5 to 10°C for 8hr and 12hr transport period can still be processed and added with semen extender and remain viable for up to 24 hours of refrigeration with considerably acceptable sperm motility and sperm liveability values.

Keywords: Epididymal sperm; non-descript cattle; post-mortem; viability

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