

**Title** *Relationship of Gender and Body Condition Score on Histomorphometric and Physical Characteristics of Selected Skeletal Muscles in Kundi Buffalo*

**Author** Muhammad Usman Saleem

**Supervisor** Dr. Hafsa Zaneb

**Member(s)** 1. Dr. Saima Masood 2. Dr. Asim Aslam

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**Abstract:**

**Introduction:** Present study was conducted to study the effect of gender and BCS on selected skeletal muscle properties in Kundi buffaloes. Tenderness, juiciness and water holding capacity are the attributes of meat quality and are related with the muscle fiber number and diameter. Normal pH of the meat is 5.2-5.4 and any deviation from these values show that the animal was under stress before slaughter.

**Materials and Methods:** Four groups of 10 animals each were taken. The first group was of 10 male animals having BCS 1-4 and the second group was of 10 male animals having BCS more than 4. The third and fourth groups were of 10 female animals each having BCS 1-4 and more than 4 respectively. Samples of muscles trapezius cervicis longissimus dorsi and semitendinosus were taken from each animal 24 hours post mortem. pH of the meat was measured with the help of pH meter 24 hours post mortem. Water holding capacity of the meat sample was measured 24 hours post mortem using Honikels gravimetric bag method. Samples were processed for light microscopy and stained by using Eosin and Hematoxylin staining technique. Tissue sections were observed for counting muscle fiber number and measuring the diameter of muscle fiber using a morphometry program.

**Statistical Analysis:** Statistical analysis was made using independent sample t- tests for the comparison based on gender or BCS between groups, and analysis with in a group was made using one way ANOVA.

**Results:** It was observed that the pH, WHC and muscle fiber number was higher in males as compared to those of females. Muscle fiber diameter was greater in females as compared to those of males. Animals with BCS 1-4 had a lower pH, greater WHC, larger muscle fiber diameter and higher muscle fiber number than those animals having BCS > 4. pH of trapezius cervicalis is higher than longissimus lumborum and semitendinosus but its WHC is lower than semitendinosus and longissimus lumborum. Longissimus lumborum has least muscle fiber diameter however trapezius has got the largest muscle fiber diameter. Number of muscle fibers in semitendinosus muscle is highest.

**Conclusion:** Through this research we determined that gender and BCS affect meat quality parameters.

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