

Effect of Age and Month on Semen Characteristics and Some Biochemical Parameters and Hormones of Iraqi Buffalo Bull

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Abstract: This study was conducted in the Physiology Laboratory - Department of Animal Production of the College of Agriculture - University of Basra, Karma Ali site. Physiology Laboratory - College of Veterinary Medicine -University of Basra for the period of 1/12/2022 And up to 1/4/2023 As used in the study buffalo bulls by ages It ranged from 3-5 years after being slaughtered by the massacre, I separated the two testicles from carcass. They were washed with clean water and placed directly in nylon bags containing distilled water and brought to the laboratory, All semen characteristics were estimated using a semen analysis device (Semen analysis)), which includes individual movement of all types, as it included tortuous sperm movement (VCL), straight sperm movement (VSL), sperm track movement rate (VAP), progressive linear movement (LIN), and twitching sperm movement (WOB). The sperms were also calculated in percentages of live, dead, and deformed sperms. Also, some biochemical components (total protein, albumin and globulin) and some hormones (testosterone and FSH), the results of the study were that the bulls at the age of 5 years were significantly superior ($P < 0.05$) on bulls at the age of 3 years in all semen characteristics (individual movement of sperm, concentration of sperm, and types of movement). VSL, VAP, LIN The percentage of live sperms also decreased significantly ($P < 0.05$) Percentage of dead and deformed sperm and twitching sperm movement (WOB) In bulls at the age of 5 years compared to bulls at the age of 3 years, and in contrast, the levels of total protein, albumin and globulin, as well as the hormones testosterone and FSH Morale rise ($P < 0.05$) in the serum of 5-year-old bulls compared to 3-year-old bulls. The months of December and January were also significantly superior ($P < 0.05$) For the months of February and March, in all semen characteristics, chemical components, and hormones, and at both ages, for bulls.

Keywords: buffalo bulls, age, month, semen characteristics, biochemical, hormones.

1. Introduction:

The quality of semen depends mainly on the moderation of macro and microclimatic conditions, regular feeding regime, general administration and health care of bulls, as well as the reproductive performance of bulls depends on the possibility of resistance of these animals to all these conditions, including genetic factors, which have the largest role in determining the characteristics of semen of bulls, as genetic influences play an important role in influencing the quality of semen through genes inherited from the bull's fathers and for several years of the life of the bull son (Koivisto *et al.*, 2009). The health and age of bulls and the skills and techniques of semen collection has an active role in influencing the quality of semen as well as the aspect of high temperatures (heat stress), especially in the tropics at the stage of sexual maturity of bulls may lead to a deterioration in the efficiency and work of the testicles and their production of deformed sperm and thus decrease the reproductive ability of bulls (Bhakat *et al.*, 2009 and Ahmad *et al.*, 2011 and Rehman *et al.*, 2012).

Since buffalo animals are seasonal animals in their reproduction, so many studies indicate a decrease in the reproductive efficiency of buffalo bulls with high temperatures, especially during the summer months, and the length of the photoperiod has a significant impact on the reproduction of animals through the secretion of