

THE EFFECT OF α -TOCOPHEROL SUPPLEMENTATION IN DILUENT TO SPERM MOTILITY, VIABILITY, AND PLASMA MEMBRANE INTEGRITY AFTER COOLING ON SIMMENTAL CATTLE

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ABSTRACT

Semen storage in cold temperature can cause an increase in reactive oxygen species (ROS) production. This condition results in spermatozoa damage, and quality decrease. This study was conducted to investigate the effects of α -tocopherol in the Simmental cattle on spermatozoa motility, viability, plasma membrane integrity quality after cooling. Semen samples were divided into four equal parts with diluent containing different concentrations of α -tocopherol according to experimental groups as follows: 0 (control), 0.5 mM (T1), 1 mM (T2) and 1.5 mM (T3).. The sperm was evaluated for motility, viability and membrane integrity by hypo-osmotic swelling test (HOST) in cooling temperature (50C) T2 and T3 produced the highest significant result compared to other groups. It can be concluded that alpha-tocopherol at the concentration of 1.5 mM can be an efficient antioxidant supplement in egg yolk skim milk diluent for Simmental cattle semen. Suplemntation α -tocopherol resulted beneficial effect on sperm motility, viability and plasma membrane in Simmental cattle.

Keywords: Simmental, α -tocopherol, motility, viability, plasma membrane integrity.