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EFFECT OF THE ADDITION OF FREEZE-DRYING LOW-DENSITY LIPOPROTEIN TO THE TRIS DILUTION ON SOME OF THE HOLSTEIN'S ACROSOME SPERM TRAITS AFTER FREEZING FOR DIFFERENT DURATIONS

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ABSTRACT : The aim of this study was to determine the effect of replacing Freeze-drying (Lyophilization) low-density lipoprotein for different periods as an alternative to egg yolk, with different concentrations (6.4, 4.8, 3.2) g / 100 ml in Tris dilution, within equal periods (2h, 4h), on some Holstein bulls acrosome sperm traits, it was purified and packaged in sealed and sterile containers and kept refrigerated until by freeze-drying, low-density lipoproteins (LDLs) were filled in liquid cases in sterile cans, they were placed in a dry-freeze device. The semen was collected from 4 bulls Holstein (4-3.5 years ranging ages), using an artificial vagina with 2 ejaculation / bull / week, 1 mL of semen / bull was taken to pooled semen, to remove individual differences between bulls, the liquid was divided into the eight treatments evenly (1 ml / treatment) using the Tris dilator and within periods equal to (2h, 4h) the dilution ratio was 1:10, egg yolks were added by 20% to the control group for both periods,it was then added by lyophilization low-density lipoprotein with different concentrations of the six treatments (6.4) T1, (4.8) T2, (3.2) T3, within equal periods (2h, 4h), the effect of these additions was studied on some acrosome sperm traits (48 hours, 1 month, 2 months). The results indicate that LDL supplementation and freeze-free storage at LDL (6.4) showed a significant increase in the percentage of acrosome safety with a significant decrease in the percentage of acrosome abnormalities.

Key words : Freeze-drying, low-density lipoprotein, Tris dilution, Holstein's acrosome sperm traits.

INTRODUCTION

Over the past years, egg yolk has become one of the most important materials used in sperm diluents because it has the ability to keep the sperm cell from the shock of cold during cooling, cooling and freezing (Amirat *et al*, 2005; Manjunath, 2012). Despite the many benefits of egg yolk, it has been found to have some damage to the integrity of the plasma and acrosomal membrane as well as the movement of the sperm cell due to the presence of some harmful substances and a large number of proteins represented by high density lipoprotein (HDL), protein and lupine, It inhibits sperm movement and respiration,It is necessary to know more about the interaction between sperm plasma proteins (BSPs), mitochondrial components and sperm cells (Manjunath *et al*, 2002). Low-density lipoproteins (LDL) can be responsible for resisting the cold shock of the sperm. Adding LDL to the diluted can improve sperm movement and maintain it during cryopreservation and freezing (Watson and Martin, 1975). Low-density lipoproteins (LDL) can be incorporated into the sperm membrane and protected by membrane fat stabilization (Quinn *et al*, 1980; Graham *et al*, 1987). The phospholipid group (LDL) works to protect the sperm cell by forming a protective layer on the surface of the semen or by repairing damaged sperm membranes lost during refrigeration and freezing (Graham and Foot, 1987), extraction of LDL from the egg yolk resulted in its superiority over the egg yolk (Mousa *et al* 2002).The addition of LDL to sperm concentrates at 8% and 20% increases the ability to protect the sperm from cold shock (Moustacas *et al*, 2011). He therefore Lyophilizate LDL, a drying process typically used to conserve perishable materials (Sasikala *et al*, 2012).But the results were unsatisfactory in most sperm characteristics (Moustacas *et al*, 2011; Neves *et al*, 2014), while Ana *et al* (2015) found positive results during cryopreservation of freezing and freezing.Cryopreservation is a technique widely used for long-term conservation (Purdy, 2006), the process of freezing the semen is cooled after dilution to a temperature close to zero Celsius and then keep it on that heat for a period of time for the purpose of balance and cooling,