

## STUDY ON THE QUALITY OF FROZEN-THAWED SEMEN OF BUCK EXPOSED TO DIFFERENT DOSES OF ENERGY GENERATED BY A He-Ne LASER

Received for publication, march, 30, 2015.

Accepted, june, 15, 2015

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**Abstract.** The aim of the research was to determine whether and how the two doses of laser irradiation energy (3.96 and 6.12 J / cm<sup>2</sup>) can improve the quality characteristics of buck sperm after freeze-thaw process.

In this regard semen straws were thawed in water bath at 39°C for 120 seconds. After thawing, semen was divided into three samples: one representing control and the other two were exposed to He-Ne laser irradiation at two different doses of energy (3.96 and 6.12 J / cm<sup>2</sup>) and mitochondrial activity, cell viability (by flow cytometry), motility and function of plasma membrane integrity test (HOST) were analyzed. He-Ne laser action on thawed buck semen leads to an improvement of motility, viability and mitochondrial function for the dose of 6.12 J/cm<sup>2</sup>, in contrast to the dose of 3.96 J/cm<sup>2</sup> which decreases the quality of semen parameters relative to the control sample.

**Key words:** Flow cytometry, mitochondrial function, He-Ne laser, motility, viability.

### Introduction

In the freezing process any biological activity is stopped until thawing and fertilizing sperm that depends on the thawing technique (Jondet [14]). The straw containing frozen semen has become the universally accepted unit for storage and genetic transfer in goat, procedure that depends on maintaining the functional activity of the spermatozoa (viability and fertilizing capacity).

Cryopreservation modifies the behavioral and functional capacity of spermatozoa, leading to a reduction in motility, in a reduced capacity of