



KEY WORDS

- ✓ Ram Semen,
- ✓ Freezing,
- ✓ Cryoprotectant,
- ✓ Glycerol,
- ✓ Dextran,
- ✓ Polyvinylpyrrolidone,
- ✓ Polyethylene Glycol

CONTACT

E-MAIL:

611145002@ogr.uludag.edu.tr

cemal.dayanikli@tarimorman.gov.tr

THESIS SUPERVISOR

TELEPHONE:

+90 224 294 1345

E-MAIL:

nurzek@uludag.edu.tr

INVESTIGATION OF THE EFFECTS OF REPLACING THE GLYCEROL, USED IN FREEZING RAM SEMEN, WITH SOME NON-PERMEABLE CRYOPROTECTANTS TO POST-THAW SPERMATOLOGICAL PARAMETERS

Cemal DAYANIKLI

ORCID-NO 0000-0003-1154-5017

BURSA ULUDAĞ UNIVERSITY

GRADUATE SCHOOL OF HEALTH SCIENCES

REPRODUCTION AND ARTIFICIAL INSEMINATION DEPARTMENT

PHD PROGRAM

GRADUATION DATE:24/02/2023

SUPERVISOR

Prof. Dr. Zekariya NUR

ORCID NO: 0000-0002-1438-221X

BURSA ULUDAĞ UNIVERSITY

GRADUATE SCHOOL OF HEALTH SCIENCES

REPRODUCTION AND ARTIFICIAL INSEMINATION

DEPARTMENT

BURSA – TÜRKİYE



THESIS ABSTRACT

In order to minimize the negative effect of glycerol on ram semen; glycerol was replaced by final density in the extender were decreased (4%, 2%, and 0%) respectively, by replacig with DEX (dextran), PVP (polyvinylpyrrolidone), or PEG (polyethylene glycol) (2%, 4%, and 6%), respectively. In the study; sperm motility, vitality, plasma, and acrosome membrane integrity, and mitochondrial membrane potential and the apoptotic index (TUNEL) were evaluated.

At the post-thaw stage; the control group containing 6 %glycerol was superior to the other groups containing pure cryoprotectant. None of the cryoprotectants (DEX6, PVP6, and PEG6) could protect the ram sperm alone against the harmful effects of freezing. It was evaluated that the cryoprotectants used in the study did not affect the apoptotic index. Also DEX and PEG could be used instead of glycerol at low concentration (2%).

APPLICATION AREAS OF THE THESIS RESULTS

Today, artificial insemination practices in the small ruminant breeding industry have not become as widespread as in the dairy industry. The problems experienced in the freezing of ram semen are one of the main reasons for this situation. With this study, it is aimed to contribute to ram semen production laboratories and scientific literature.

ACADEMIC ACTIVITIES

