

Summary of the DVM thesis No. 16499, Faculty of Veterinary Medicine, Urmia University.

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Title of thesis: Effects of *Salvia officinalis* L. extract on the quality of Simmental bulls semen after frozen-thawed process

Summary:

This study has been conducted to investigate the effects of freezing and adding *Salvia officinalis* L. extract to the seminal fluid diluent. The purpose of this study is to investigate the parameters of motility, plasma membrane integrity, sperm viability and DNA damage, malondialdehyde content and total antioxidant capacity of sperm, in order to determine the effective concentration of *Salvia officinalis* L. extract for freezing and thawing semen of seminal cows. Freezable sperm samples were collected and divided into four groups: the first group (control) with zero micrograms/ml of *Salvia officinalis* L. extract, the second group with 1.25 micrograms/ml of *Salvia officinalis* L. extract, the third group with 3.75 µg/ml of *Salvia officinalis* L. extract and the fourth group with 6.25 µg/ml of *Salvia officinalis* L. extract. After 72 hours of freezing and thawing, the obtained results showed that the addition of 3.75 and 6.25 micrograms/ml of *Salvia officinalis* L. extract significantly improved the general and progressive sperm motility indicators, sperm viability, integrity of plasma membrane, total antioxidant capacity and reduction of sperm DNA damage compared to control groups. Therefore, it can be concluded that the addition of 3.75 and 6.25 micrograms/ml of *Salvia officinalis* L. extract to the freezing medium of Simmental cow sperm, by increasing the improvement of sperm quality after the freezing process, may increase the fertility rate after artificial insemination with frozen sperm.

**Keyword:** *Salvia officinalis* L. extract, Motility indicators, Semen quality, frozen-thawed, Simmental bulls.