

# Effect of catechin on lipid peroxidation and vital parameters of Holstein bull sperm after freeze-thawing process

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## Abstract

The aim of this study was to determine the antioxidant properties of catechin on lipid peroxidation and vital parameters of Holstein bull sperm after the freeze-thawing process. In this experimental study, semen samples were collected from four mature Holstein bull, twice a week using an artificial vagina. Ejaculates were pooled in order to eliminate the individual effects of bull. Semen samples were divided into four equal groups (8 reps). Zero (control), 20, 30 and 40 mg/ml of catechin with diluents based on egg yolk-citrate were added to the semen samples. Following cooling and equilibration stage of semen samples, the samples were stored in a nitrogen tank for a period of 30 days. After thawing procedure, the level of malondialdehyde in sperm samples were measured using the ELISA method. Also, membrane integrity, motility and viability of sperm were also examined. Results showed, membrane integrity, motility and viability of sperm samples treated with a concentration of 20, 30 and 40 mg/ml catechin in dose-dependent manner significantly increased and level of malondialdehyde dose-dependent manner significantly decreased, compared to the control groups. Therefore, the use of catechin in bull semen diluent can improve sperm vital parameters and decreases lipid peroxidation of sperm after the freeze-thawing process.

**Key words:** Catechin, Lipid Peroxidation, Bull, Sperm

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