Taiwan Livestock Res. 53(4)：237-243, 2020
DOI：10.6991/JTLR.202012_53(4).0005

Effect of freezing programs on the sperm quality of frozen-thawed boar semen [1]

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Received: Aug.5, 2020; Accepted: Jan. 28, 2021

Abstract

The objective of this study was to evaluate the effects of different freezing programs on the quality of frozen-thawed boar semen. Semen collected from five Duroc boars were diluted with Lactose-egg yolk extender, which were brought to 5×10^8 cell/mL as the final concentration, and packaged into 0.5 mL plastic straws. Three freezing programs for boar semen cryopreservation were applied and compared: (1) cooling rate -3℃/min from 5 to -5℃, holding at -5℃ for 1 min and then frozen at -50℃/min rate to -140℃, (2) cooling rate -3℃/min from 5 to -5℃, and then frozen at -40℃/min rate to -80℃, holding at -80℃ for 30 sec and then frozen at -60℃/min rate to -140℃, and (3) cooling rate -20℃/min from 5 to -8℃, and then frozen at -70℃/min rate to -140℃ after reaching -140℃, the straws were then plunged into liquid nitrogen. Analysis of sperm quality after thawing showed that the percentage of motility, rapid progressive motility, motility kinetic variables parameters and acrosome integrity were not affected by the different freezing programs. In conclusion, the 3rd freezing program is recommended for boar semen cryopreservation due to the shorter processing time and reduction of liquid nitrogen consumption.

Key words: Boar, Frozen semen, Freezing program.

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