

Effect of freezing extenders supplementation with whole egg yolk, low-density lipoproteins and egg yolk plasma on semen qualities of boar frozen-thawed sperm ⁽¹⁾

Sheng-Yang Wu ⁽²⁾ Ting-Chieh Kang ⁽³⁾ and Chia-Chieh Chang ⁽²⁾⁽⁴⁾

Received: Feb. 20, 2017; Accepted: Sep. 12, 2017

Abstract

The aim of this study was to compare post-thawed sperm quality characteristics of the boars following freezing in extenders supplemented with whole egg yolk (EY), low-density lipoproteins (LDL) and egg yolk plasma (EYP). Semen was collected from five sexually matured and healthy boars, and then retained for sperm cryopreservation. The sperm quality of frozen-thawed semen was determined by computer-assisted image analysis system (CASA) and Semen Analyzer (VideoTesp-sperm 2.1). The characteristics of frozen-thawed semen characteristics including total motility, progressive motility, CASA motility and acrosome integrity (fluorescein isothiocyanate conjugated with peanut agglutinin) were evaluated. The results showed that the percentage of total motility and rapid progressive motility the of boar semen cryopreserved in extender containing 20% EYP after thawing for 4, 6 hrs were significantly better than 20% EY ($P < 0.05$). It showed that the percentage of total motility, rapid progressive motility and acrosome integrity of 9% LDL were significantly lower than those of 20% EY, 20% EYP ($P < 0.05$). Accordingly, extender containing 20% EY or 20% EYP could protect the boar spermatozoa during the cryopreservation, the effectiveness of protection sperm was significant higher than that of 9% LDL.

Key words: Boar, Sperm quality, Cryopreservation.

(1) Contribution No. 2574 from Livestock Research Institute, Council of Agriculture, Executive Yuan.

(2) Taitung Animal Propagation Station, COA-LRI, Taitung 95444, Taiwan, R. O. C.

(3) Hengchun Branch, COA-LRI, Pingtung 94644, Taiwan, R. O. C.

(4) Corresponding author, E-mail: janices@mail.tlri.gov.tw.