

The effects of semen concentration and individual boars on the frozen-thaw sperm viability ⁽¹⁾

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Received: Apr. 20, 2015; Accepted: Mar. 30, 2016

Abstract

The purposes of this study were to evaluate the effect of both of boar and frozen boar semen concentration on the frozen-thaw sperm viability. The freeze boar semen were produced using boars from Changhua Animal Propagation Station and than thaw and insemination. The conception rate and litter size were 67% (8/12) and 9.4 ± 2.4 fetus/pig. The similar results were gotten from 2 farms. Another way the 6 Duroc semen samples were mixed with same concentration and then frozen at 13.1, 10.0, 7.8, 6.4 and 5.6×10^8 sperms/mL concentration. After frozen-thaw, the viability of sperm using fluorescent method shows that the 6.4×10^8 sperms/mL concentration frozen-thaw semen had $43.3 \pm 9.0\%$ live sperm, significant higher than the 13.3×10^8 sperms/mL concentration, $14.5 \pm 2.9\%$ ($P < 0.05$). On the other study, the 24 semen samples were collected from 7 Landrace and 17 Duroc boars. High and low frozen semen concentrations, 10.0 and 6.4×10^8 sperms/mL, were made at each sample. The viability of sperm in the frozen-thaw semen was determined by microscopy method, the result shows that the low concentration samples had 36.3% motile sperm higher than the high concentration 25.8%. The number and ratio of the boars having lower than 30% motile sperm were calculated and the ratios of boar at high and low concentration were 41.7% (10/24) and 25.0% (6/24). However, it seems that using our program to make frozen boar semen, the frozen-thaw semen at high concentration had lower live sperm ratio. The boar effect bring out lower ratio live sperm in frozen-thaw semen was not less than 25%.

Key words: Boar, Semen, Cryopreservation, Conception rate, Litter size.

(1) Contribution No. 2386 from Livestock Research Institute, Council of Agriculture, Executive Yuan.

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