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PRESERVATION OF GARUT RAMS SPERMATOZOON AS A SOURCE OF MALE GERM PLASM

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ABSTRACT

This study was conducted to examine the quality of ejaculated sperm by Garut rams to be used for artificial insemination (AI) and viability of sperm that were collected from prescrved *cauda epididymis* (4°C up to 12 days) for assisted reproductive technology. The semen was collected by artificial vagina, with the sperm motility, live sperm, acrosomal intact, and intact plasma membrane observed. Sperm motility was 75%, while for the live sperm, intact plasma membrane and sperm abnormality were 91.5%, 90.0%, and 1.8%, respectively. In the other study, sperm was collected from *cauda epididymis* by aspiration method and diluted in different media: 1) Brackett Oliphant (BO) media and 2) modified Phosphate Buffer Saline (mPBS). Evaluation of sperm motility and intact plasma membrane were conducted after washing, counting and dilution of the sperm. The results of this study showed that the sperm motility and intact plasma membrane could be maintained better in BO rather than PBS medium although they were not statistically different ($P>0.05$). At day 12 of preservation, the motility and intact plasma membrane of sperm collected from *cauda epididymis* were 0.7% and 1.33% for motility and plasma membrane intact, respectively. These findings showed that the Garut rams semen was qualified for AI and frozen processing; *in vitro* embryo production by introducing the assisted reproductive technology such as intracytoplasmic sperm injection (ICSI) could be applied by using the sperm collected from preserved *cauda epididymis* until 12 days of preservation at 4°C.

Keywords : Reproduction/spermatogenesis/insemination/Garut rams/small ruminant

INTRODUCTION

Indonesia is a country with tremendous amounts of genetic resources and biodiversity. In Indonesia, the percentage of meat and wool produced by sheep as a small ruminant in West Java Province is approximately 46.2% (Anonymous 1999). One of the ruminants is Garut sheep, endemic to Indonesia, and potential for meat production. Moreover, they have a good performance for sheep contest. The population of Garut sheep decreased from 7.6 million in 1997 to 7.2 million in 2001.

In an attempt to increase the Garut sheep population, several efforts should be done to maintain the population. Application of reproduction biotechnology such as artificial insemination (AI) and *in vitro* embryo production are the solutions. Artificial insemination has been routinely done in large ruminants such as cattle and

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