SPERM MATURITY OF GROWTH PERFORMANCE TESTED BOARS

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Introduction

Mitochondria is a key factor in providing energy for motility and fertilization of sperm. The energy required for sperm metabolism is provided by mitochondria. Mitochondrial integrity measurement is an important basis for sperm quality determination. Sperm maturity evaluation of young boars could be done by mitochondrial integrity measurement via sperm flow cytometer. The objective of this study is conducted to measure the sperm concentration and mitochondrial integrity by using flow cytometer to evaluate the semen productive ability and maturity of high feed efficiency young boar, and try to apply the elite young boar for the reproduction of breeding stock and the production of meat pig early.

Materials and Methods

A total of 1,079 finished test boars from 3 breeds (Duroc, Landrance and Yorkshire) in class 201507, 201509, 201510, 201511, 201601, 201603, 201604, 201605, 201607, 201609, 201610, 201611, 201701, 201703, 201704 and 201705 of the Pig Performance Testing Station of National Animal Industry Foundation were used at this project. We collected the semen 20 days before the auction and stored at 17℃. The collected semen were immediately analyzed the sperm concentration and mitochondrial integrity at least 5,000 sperm each semen to assess the semen productive ability of young boar.

Results and Discussion

The results showed that the sperm concentration and mitochondrial integrity of the young boars from Duroc (n=701), Landrance (n=270) and Yorkshire (n=108) were 340 ± 106 (10^6/ml), 376 ± 119 (10^6/ml), 289 ± 126 (10^6/ml) and 57 ± 21.4 (%), 58.9 ± 24.1 (%), 54 ± 23.3 (%), respectively. These data indicated that young boars with better feed efficiency have decreased sperm concentration and mitochondrial integrity.