IVF Technique for Assessing Semen Quality and Boar Fertility

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In the swine industry, a single male has a more significant impact on efficiency and productivity than an individual female, and this impact is higher with the use of artificial insemination (AI). In AI centers, routine semen assessment includes the evaluation of sperm characteristics such as concentration, morphology, viability, and motility. Some of these characteristics can be useful to detect male reproductive disorders that result in low fertility rates. In the last few years semen assessment techniques for predicting male fertility potential rather than simply infertility have been studied.

In the first part of the present study three boars (B, R, and G) were collected twice a week during a period of 8 months. On alternate weeks 6 ml of the sperm rich fraction were taken for in vitro evaluation. The remainder of ejaculate was pooled, evaluated (motility, morphology and concentration), and diluted into 1.5 billion of morphologically normal sperm per dose to breed groups of gilts over the same period. Semen was processed for use in the standardized IVM/IVF system developed previously to determine penetration, polyspermy, and monospermy rates. Penetration rate (B 96.8 %, R 88.1 %, and G 46.6 %; $P<0.0001$) and total litter size born (B 10.28, R 10.22, and G 8.11; $P<0.005$) were different among boars.

Implications

Those results suggest that *in vitro* characteristics such as penetration rate could be useful for assessing semen quality and boar fertility for predicting boar reproductive performance.