

Case study: The effect of using phase contrast microscopy on the reproductive efficiency of breeding sows in Taiwan black pigs

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This study aimed to determine whether phase contrast microscopy could enhance the reproduction efficiency of breeding sows in Taiwan black pigs. A commercial farm at Eastern Taiwan raised around 2,000 Berkshire * Duroc pigs, with 190 breeding sows. Using phase contrast microscopy for semen examination, the number of inseminated sows remained unchanged ($P > 0.05$). There was a significant increase in conception rate of 13.6% (86.4 vs. 72.8%, $P < 0.05$). Farrowing sow numbers increased significantly by 7.3 heads (36.4 vs. 29.1, $P < 0.05$). In each breeding, the farrowing rate increased by 17.3% (78.3 vs. 60.9%, $P < 0.05$). Return sow numbers for each breeding significantly decreased by 6.4 heads (6.5 vs. 12.9 heads, $P < 0.05$). The number of abortion sows for each breeding significantly decreased by 2.6 heads (2.7 vs. 5.3 heads, $P < 0.05$). The abortion rate for each breeding significantly decreased by 5.7% (5.8% vs. 11.5%, $P < 0.05$). In summary, phase differential microscopy can be used in commercial black pig farms to increase conception rates, farrowing rates, and reduce abortion and return rates. Increasing the efficiency of breeding management can reduce costs for farmers and increase their income.

Key words: Taiwan black pig, Phase contrast microscopy, Reproductive efficiency