

# A COMPARISON OF SWINE AI PROCEDURES BETWEEN TRADITIONAL CERVICAL CATHETERS AND A NEW MODEL OF HYDRAULIC IUI The AbΣUI™- CATHETER UNDER FIELD CONDITIONS

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## Introduction

Standard artificial insemination (AI) is used in swine farms world wide and most of them use traditional cervical AI catheters. Nowadays, intra-uterine insemination (IUI) catheters are often used instead of traditional catheters in many parts of the world, and AI procedures using IUI catheters can reduce the number of spermatozoa per dose. However, some previous reports showed there were factors that could lead to unsuccessful of use of traditional IUI catheters with reduced dosage. Manufacturers are constantly trying to produce new models of IUI catheters. One modern concept used for this study is a safe IUI catheter that uses a patented hydraulic injection insemination system; AbΣUI™-. The aim of this study was to evaluate the service efficiency using the new model of Absolute Swine Insemination Co., LLC (ASIC) AbΣUI™- IUI catheters compared to the previous AI procedures using traditional cervical catheters.

## Materials and Methods

There were 2 groups of crossbred sows, totalling 1,390 sows, for this study. They were conducted under field conditions in a commercial swine farm in Ratchaburi province, Thailand, for a period of 20 weeks and individually allocated to gestation crates. Water was provided *ad libitum* all day. Group 1 was pre-experimental group, 800 sows (average parity 2.3), for 12 weeks. Group 2 was experimental group, 590 sows (average parity 2.4), for 8 weeks. Oestrus detection was performed twice daily beginning after weaning and the animals were artificially inseminated after detecting heat. Pre-experimental groups used standard AI procedures by using traditional catheters. The experimental group used ASIC AbΣUI™- catheters. Serviced data was collected from PigLIVE®, pig farm management software, for comparison and evaluation.

## Results

The return rate in the 800 sows of pre-experimental group was 23.5% compared with an impressive 11.0% in the 590 sows of experimental group using IUI technique. Other results from both groups are summarised and shown in Table 1.

**Table 1 Service Efficiency Report of Standard AI and IUI**

	Standard AI	AbΣUI™-
<b>Total No. of Services</b>	800	590
<b>Weaning – 1<sup>st</sup> Service Interval</b>	6.9	5.7
<b>Sows bred by 7 days (%)</b>	85.0	92.1
<b>% One Mating</b>	2.6	12.4
<b>% Two Mating</b>	25.8	77.1
<b>% Three or More Mating</b>	71.6	10.5
<b>Returned to Oestrus (%)</b>	<b>23.5</b>	<b>11.0</b>
<b>% Early Returns</b>	1.3	1.2
<b>% Regular Returns</b>	<b>13.8</b>	<b>7.8</b>
<b>% Irregular Returns</b>	4.3	1.8
<b>% Late Returns</b>	4.1	0.2
<b>% Expected to Farrow</b>	<b>71.8</b>	<b>88.9</b>

## Discussion and conclusions

This study showed the ASIC AbΣUI™- injection technique can improve service efficiency. Previous service efficiency data showed that the returned rate was 23.5% but after using the new ASIC IUI catheters the returned rate was decreased to 11.0%. Regular returns were reduced also. Service efficiency improved and led to increasing %expected to farrow from 71.8% to 88.9%. For number of mating per heat, 77.1% of AbΣUI™- sows received 2 doses compared to 71.6% of the standard AI group being serviced 3 or more times. Our results show that 2 matings per heat is enough if producers use this new AbΣUI™- technique, follow good farm management, and properly understand the timing of oestrus vs. ovulation. This new model of AbΣUI™- catheters uses the AbΣUI™- /DIUI concept. ASIC's AbΣUI™- model uses a hydraulic injection insemination system with a latex membrane inside the catheter. When users squeeze the semen bottle for pushing sperm into the female genitals, the latex membrane safely extends and gently enters directly into the uterus. This concept will not cause damage to the uterus mucosa whilst other IUI catheters can. Therefore, ASIC's catheters could be use as a safer IUI catheter in swine farms.

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