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

比较猪人工授精的传统子宫颈导管和新的宫内人工授精的 AbΣUI ™导管在实地农場条件下

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Introduction 导言

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; Ab∑UI™-. The aim of this study was to evaluate the service efficiency using the new model of Absolute Swine Insemination Co., LLC (ASIC) Ab∑UI™- IUI catheters compared to the previous AI procedures using traditional cervical catheters.

标准人工授精（ AI ）是用于世界各地猪场，其中多数采用传统的子宫颈人工授精导管。如今，宫内人工授精（IUI）导管在世界许多地方常常被用来取代传统的导管，并使用宫内人工授精导管可减少每剂精子数目。然而，一些以前的报告显示，减少剂量可能导致使用传统的宫内人工授精失败。制造商正不断尝试新的宫内人工授精导管。一个现代概念用于这项研究是一个安全的宫内人工授精导管，利用专利的液压注射受精体系; AbΣUI ™ -.本研究的目的是评估使用新的 Ab 猪人工授精公司（ASIC） AbΣUI ™导管的效率 -宫内人工授精导管相比以前的传统的宫颈导管和程序。

Materials and Methods 材料和方法

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 Ab∑UI™- catheters. Serviced data was collected from PigLIVE®, pig farm management software, for comparison and evaluation.

这项研究有 2 组杂交母猪，共计 1390 母猪。在泰国猪府省的商业农场实地条件下进行的，为期 20 周。水是随意一整天提供。第 1 组预实验组， 800 母猪（平均经产 2.3**次**） ，为期 12 周。第 2 组是实验组， 590 母猪（平均经产 2.4**次**） ，为期 8 周。断奶后每天进行两次发情检测，和发现发情后人工受精。预实验组使用标准的人工授精程序，用传统的导管。实验组使用的 ASIC AbΣUI ™ -导管。服务数据收集 PigLIVE ® 的猪场管理软件，进行比较和评价。

Results 结果

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.

返回率在 800 母猪预实验组 23.5 %相比令人印象深刻的 11.0 % ， 590 母猪实验组采用宫内人工授精技术。其他由这两个群体结果是总结于表 1 所示。

Tabel 1 Service Efficiency Report of Standard AI and IUI 表一：标准和宫内人工授精服务效率的报告

	Standard AI 标准授精	AbVUI™- 宫内授精
Total No. of Services 授精母猪数	800	590
Weaning – 1st Service Interval 断奶-第一次授精日数	6.9	5.7
Sows bred by 7 days (%) 7 天内授精的母猪（ %）	85.0	92.1
% One Mating % 一次交配	2.6	12.4
% Two Mating %二次交配	25.8	77.1
% Three or More Mating %三次交配或以上	71.6	10.5
Returned to Oestrus (%) 返回发情（ % ）	**23.5**	**11.0**
% Early Returns %早返回	1.3	1.2
% Regular Returns % 正常返回	**13.8**	**7.8**
% Irregular Returns %不 正常返回	4.3	1.8
% Late Returns %晚返回	4.1	0.2
% Expected to Farrow %预期产育	**71.8**	**88.9**

Discussion and conclusions 讨论和结论

This study showed the ASIC AbVUI™- 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 AbVUI™- 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 AbVUI™- technique, follow good farm management, and properly understand the timing of oestrus vs. ovulation. This new model of AbVUI™- catheters uses the AbVUI™-/DIUI concept. ASIC's AbVUI™- 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.

本研究显示 ASIC 的 AbΣUI ™ -注射技术可以提高服务效率。前服务效率的数据显示，返回率为 23.5 % ， 但在使用新的 ASIC 宫内人工授精导管返回率下降到 11.0 % 。正常返回率也减少了。服务效率提高，并导致产仔率增加预计从 71.8 %到 88.9 % 。对于一些交配， 77.1 %的 AbΣUI ™ -母猪收到 2 剂相比， 7 1.6%的标准组提供 3 剂或更多。我们的研究结果表明，如果使用这个新的 AbΣUI ™ -技术,每発情 2 剂已足够，遵循良好的农场管理，并正确理解发情与排卵的时间。这种新的模式 AbΣUI ™ -采用了液压系统注射受精与导管内的乳胶膜。当用户挤压瓶精液精子推到生殖器，乳胶膜的安全延伸并轻轻直接进入子宫。不会造成损害。因此，ASIC 的宫内人工授精管使用更安全适合用于养猪场。

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