NUTRICELL
Nutrientes Celulares

Opinion Letter
观点信件

I have been working with swine reproduction since I was graduated, in 1992, and Artificial insemination, especially the right moment (related to estrus) and number of inseminations, was the major subject of my Master Science and PhD. courses.

我是在 1992 年毕业以來一直做与猪繁殖和人工授精的工作,特别是在适当的时候（相关发情）和授精次数，是我硕士和博士学位的主要课程。

My experience with Absolute Insemination catheters started last year, when first met Sr. Mark Anderson in a fair in my country. The major proposal of this technique is to deposit semen in the uterus, what is well known to give betterresults compared to traditional inseminations. The difference to the other intrauterine methods is that it's made in such easy way.

我对 Ab 人工授精导管的经验，从去年开始;当第一次见到马克安德森先生在我国的一个農展会。这项技术主要的建议，是精液注入子宫内，人所共知的是与传统授精相比，会让更好的结果。分别的是,与其他宫内的方法,这方式是很简单的。

I always believed, according to my experiments, that a single insemination would be enough if performed at the right time (till 24 hours before ovulation). The problem when we took it to the field conditions was that not always the insemination was successful because these single inseminations could be influenced by back flow, which is very usual in traditional cervical insemination, making a single insemination really vulnerable. So, when we inseminate in the uterus this problem is avoided and I can say we inseminate at the write place.

我始终相信，据我实验，如果在正确的时间（排卵之前 24 小时)授精一次已会足够的。这个问题，当我们實地应用時,情况并非总是授精获得成功的，因为这个单授精可能受到回流影响，在传统的宫颈内授精是非常普遍，使单一的授精实在脆弱。所以，当我们授精到子宫内,这个问题是可以避免和我可以说，是对的地方。

Based on these information, we decided to perform experiments with single insemination AI catheters. We first determined when would be the write time by using ultrasound to check when sows ovulate according to the onset of estrus. In both herds all scanned sows ovulated between 24 and 48 hours after onset of estrus. So we decided that, in the treated group, insemination should take place 24 hours after onset of estrus. Well, we chose herds that we knew the heat checking was very well performed. We compared the single insemination with the traditional cervical insemination, as shown in the 2 trials below.

根据这些信息，我们决定要执行单一授精的实验。我们首先用超声波确定了检查母猪排卵的时间;跟据发情的开始。在这两群的母猪, 所有扫描确认在开始发情后 24 到 48 小时之间排卵。因此我们决定，在治疗组，应采取在开始发情后 24 小时單一授精。那么，我们知道，选择的猪群有很好的发情检测。我们比较单一的人工授精与传统的宫颈内人工授精，如图所示，2 个实验结果如下。

First Trial: A single absolute insemination 24h after onset of estrus compared to 3 traditional AI, 12, 24 and 36h after onset of estrus.

第一个实验：一个单一的 Ab 受精在开始发情 24 小时后相比，传统的 3 次授精，在开始发情后的 12，24 和 36 小時。

Treatment 治疗	Sows 母猪数	Pregance Rate 怀孕率	Litter size 产仔数
Single Absolute 單一 Ab	23	95%	12,86957
Three AI 传统的 3 次授精	20	86%	12,14286

Second trial: A single absolute insemination 24h after onset of estrus compared to 2 traditional AI, 12 and 36h after onset of estrus.

第二个实验：一个单一的 Ab 受精在开始发情 24 小时后相比，传统的 2 次授精，在开始发情后的 12 和 36 小時。

Treatment 治疗	Sows 母猪数	Pregnace Rate 怀孕率	Litter size 产仔数
Single Absolute 單一 Ab	31	80%	13,23
Two AI 传统的 2 次授精	31	84%	12,77

Summary of the 1st and 2nd trials:
第一和第二实验的总结：

	Treatment/Absolute 治疗的 Ab 組	Control/Traditional 传统的对照组
Ave. Farrowing rate 平均产仔率	87.5%	82.5%
Ave. Litter size 平均产仔数	13.06	12.60
Total no. of animals 母猪总数	54	51
Insemination/s per sow 每母猪授精次数	1	2.5
Total semen doses 总精液剂量	54	157.5

As one can notice, despite the number of sows is not enough to make definitive conclusions, it seems that there is no difference according to farrowing rate and litter size. And if we look at the savings related to reduction (60% less) in labor with insemination and semen collection, in material (not only catheters but all related equipment) and semen (even the number of boars in the herd) it makes a big difference.
大家可以看到，尽管母猪数是不足够作出明确的结论，这似乎根据产仔率和产仔数是没有分别的。但如果我们从节省成本的角度来看有关的减少（ 60 %）在人工授精劳工和精液的收集，在物质（不仅是导管，但所有相关设备）和精液（即使在群的公猪数）是一个很大的差异。

My personal opinion is that we could associate the concepts of inseminating at the right time and in the write place, what explain the results.
我个人的看法是，我们可以联想到的概念授精在正确的时间，以及注入精液在正确的地方，是理想的结果。

Depending on the final results and the semen quality, we can still try to reduce the number of sperms and the volume of the doses of semen. So, insemination will be more and more important to decrease the costs and improve the quality of pork meat.

根据对最后的结果和精液质量，我们仍然可以设法减低精子的数目和精液的剂量。因此，人工授精将越来越重要，以减少成本和提高猪肉的质量。

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