

บทคัดย่อเรื่องวิจัย*

ABSTRACTS*

**Comparison of Conception
of 50% and 75% of HF
Crossbreds at Various
Ages and Heat**

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During 1979-1986, 115 heads of 50% and 75% HF crossbred were artificially inseminated. Forty two of them were first inseminated at 1 1/2 years of age, 38 at 2 years, 12 at 2 1/2 years, and 10 at 3 years of age. No return of heat and pregnancy was checked 2 months later, then the nonconceived heifers were reinseminated. The rate of conception after single insemination in 50% HF crossbred heifers at 1 1/2 to 2 years of age with 3 or more heats was good. However, double insemination in 75% heifers at 2 years of age gave better conception rate. Crossbred between HF and Brahman heifers usually showed signs of the first heat around 2 years of age and also gave a good conception rate upon the first heat.

*Presented at the thirteenth Annual Veterinary Sciences Conferences of the Thai Veterinary Medical Association under the Royal Patronage, Bangkok Thailand. December 2-4 1986.

The Success of Embryo Transfer in Dairy Crossbreed

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Thirteen dairy crossbred cows were superovulated on either days 8, 9, 10, 11 or 12 of the oestrus cycle by injection of 2,000 or 2,500 i.u. pregnant mare serum gonadotropin (PMSG), followed 48 hours later by injection of 25 mg prostaglandin $F_{2\alpha}$ ($PGF_{2\alpha}$). All animals were artificial inseminated at 48, 72 and 96 hours after $PGF_{2\alpha}$. Embryos were recovered non-surgically 6 to 7 days after the onset of oestrus. A mean of 4.86 ± 1.68 and 8.33 ± 2.31 embryos per donor were recovered at uterine horn and uterine body respectively. Eighteen embryos were transferred non-surgically to 12 recipients, one or two embryos per recipient. Recipients were tested for early pregnancy by the determination of milk or plasma progesterone between days 21 and 27 after oestrus and by rectal palpation at 90 days after oestrus. One animal aborted at 40 days after transfer of the embryo and one delivered twin female calves on 8 September 1986 at the Dairy Promotion Organization Farm. This has been the first record produced by a group of pure Thai scientists.

Artificial Insemination in Indigenous Goats : A Preliminary Report

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One hundred and twelve does, purchased from 4 provinces of southern Thailand, were inseminated artificially either with fresh semen or with frozen semen in October 1985. The use of vasectomized bucks as an oestrus detector, the semen collection with an electroejaculator, the control of does for semen deposition, and the methods of semen deposition were studied.

The result showed that oestrus does were easily marked by vasectomized bucks. Electroejaculation after an intramuscular injection of xylazine at the dose of 20 mg./animal gave the result that semen volume was 0.94 ± 0.47 ml., semen density ranged from cloudy to thick cream, and semen motility was 9.28 ± 1.17 (marked on 0 to 10). The does could be restrained on a galvanised iron tube during the insemination and semen deposition in the cervix could be done with a glass speculum and a breeding gun (in case of frozen semen was used) or a pipet connected to 1 ml. syringe (in case of fresh semen was used.)

Altrenogest for Induction of Estrus in Gilts

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To facilitate artificial insemination (AI) in a farm, Altrenogest was used to synchronize estrus in gilts. Sixty four crossbred gilts (Landrace x Large White) belonged to a private piggery at Nakorn-Pathom were used. They experienced first estrus (aged between 5.9-8.5 mo) and were randomly allotted into 2 groups, Altrenogest treated (n=35) and non-medicated control (n=29). Altrenogest, at the level of 20 mg, was individually given with morning feed to the treated gilts for 18 consecutive days. After cessation of the treatment detection of estrus was carried out twice daily, morning and evening, as in the control animals which were observed for estrus since the beginning of the trial. When animals were in heat they were first inseminated 12 hr later with diluted (1:1 to 1:3) fresh semen and re-insemination 12 hr after the first insemination. Eighty eight percent (31/35) of the treated gilts were in heat within 3-6 days after cessation of the treatment. While control animals exhibited signs of heat ditributively over a period of 39 days. All of the treated and 93% (27/29) of the control animals were in heat and inseminated. Performance of the treated and control gilts in terms of farrowing rate, remated and culling were 40% 60s 27.6, 48.6% vs 44.8% and 11.4% vs 27.6%, respectively. While for litter size at birth, born alive and litter size at weaning were 7.4 ± 1.5 vs 8.4 ± 2.8 , 7.4 ± 1.5 vs 8.1 ± 2.5 and 7.4 ± 1.5 vs 7.8 ± 2.6 respectively. All traits studied were not significantly different.

These findings demonstrated that, Altrenogest induced estrus in 97% gilts which had experienced one estrus within 10 days. This phenomenon renders more advantage of using superior genetic boars both in AI and planned mating.

**A Study on the Acquired Immunity
of Trichinella spiralis
in Swine
2. Distribution of T. spiralis
Larvae in Muscles and Organs
of Swine**

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Two piglets each, aged 2 1/2 months were inoculated with 10,000 and 500 T. spiralis larvae, respectively. After 54 days one pig from each group was challenged with 10,000 larvae. All pigs were necropsy on day 114th. after the first inoculation. Fifty grams of various muscles and organs were examined by artificial peptic digestion for 3 hours (1% of pepsin and 0.7% of HCl incubated at 37° c on magnetic stirrer hot plate).

The most heavily infected muscle of pig primary inoculated with 10,000 larvae was diaphragm (75 larvae/gm.). The larvae per gram in laryngeal, masseter and intercostal muscles were 43, 35 and 29, respectively. The lowest infected muscle was oesophageal (9 larvae/gm.). The parasites were not found in the intestinal and other internal organs. Most of the larvae found in this pig were alive.

The larvae were not found in the muscles and internal organs of pig initially inoculated with 500 larvae.

The other two pigs were initially inoculated with high dose of larvae (10,000 larvae) and low dose of larvae (500). They were challenged with 10,000 larvae after 54 days. The muscle larvae of pig with high initial inoculation was extremely low in number and most of them were dead larvae. In another pig, the parasites were not found in any muscle and organ.

The study indicated that the evidence of high resistance expressed acquired immunity against challenge infection both low and high initial inoculated pigs. The timing of acquired immunity in pigs appeared to be strongly dependent upon an antigenic threshold.

Fowl Cholera and Duck Plaque Vaccines

VII The Comparative Studies of Immune Response of Live Attenuated and Killed Duck Plaque Vaccines

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This study was done to compare the immune response of live attenuated duck plaque vaccines and formalin-killed duck plaque vaccines. Killed duck plaque vaccines were prepared in two ways, one combined with normal saline (0.85%) and another with incomplete Freund's adjuvant. The antibody level to duck plaque was determined by Neutralization Test and the immunity of the vaccinated ducks was conducted by challenge-inoculation with homologous duck plaque virus.

The immunity induced by live attenuated duck plaque vaccine was 100 percent protection. The killed duck plaque vaccines, modified from live attenuated vaccine, with and without adjuvant and the killed duck plaque vaccine from the liver of infected ducks combined with saline could not protect the ducks. The immunity induced by killed duck plaque tissue culture vaccine combined with saline was 40 percent protection, whereas the immunity induced by killed duck plaque from liver and tissue culture combined with adjuvant were, both, 60 percent protection. Therefore, the present of adjuvant seemed to enhance the protection property of vaccines.

The Neutralization indices of neutralizing antibody after vaccination with all duck plaque vaccines were less than 1.5 and the single vaccination did not induce any development of neutralizing antibody. Therefore, it can be concluded that the NI was not correlated with the vaccine protection.