CLINICAL, FIELD AND PROBLEM-BASED RESEARCH IN VETERINARY MEDICINE

Annop Kunavongkrit
FACULTIES RESPONSIBILITY

Teaching
Research
Academic service
RESEARCH COMMITMENT
If the objective will be excellence
No more business as usual
RESEARCH COMMITMENT

Principle-driven
Not
Money-driven
FACULTY SUPPORT

- Provide good research environment
- Provide seed resources for young researchers
- Provide necessary facilities
WHY WE ARE HERE AND DO THE RESEARCHES FOR?

- It is **not about us**, it is about our students.

- It is **not about more research papers**, it is about knowledge we learned in order to pass on to our students.

- It is **not about money and what we will get**, it is about the readiness of our new generation graduates to meet the new challenges.
It is not about what we can do or would like to do, it is about what we should do or must do.

It is not about our self-satisfaction, it is about our responsibilities.
WHAT WE REALLY NEED FOR RESEARCH

Research fund or money
People or assistant or advisor
Facilities or place or laboratory
Time

Actually we need BRAIN and HEART

Our intention and our ideas
KEY FACTORS FOR SUCCESSFUL RESEARCH PROGRAMS

TWO I
TWO T
TWO F

I-T-F or F-T-I
KEY FACTORS FOR SUCCESSFUL RESEARCH PROGRAMS

Intentions and Ideas
Time and Teams
Funds and Facilities
TYPE OF RESEARCHES

Experimental research
Clinical research
Field research
Descriptive research
Retrospective research
Methodological research
Review literatures
A case report or Cases report
Etc.

All research should be problem-base
CASE REPORT
การศึกษาสาเหตุและการแก้ไขการคลอดยากของสุกรในเขตจังหวัดนครปฐม

THE STUDY OF INCIDENCE AND CORRECTION OF SWINE DYSTOCIA IN NAKORNPATHOM PROVINCE

Annop Kunawongkrit
Prachin Virakul
Prasit Bodhipaksa

Summary

One-hundred and ten cases of swine dystocia in Nakornpathom area were studied in two aspects. Firstly, the incidences were divided according to the number of pregnancy, number of piglets, maternal age for the...
Seroagglutination test for Brucellosis had been carried out on 74 sows and 12 boars which have had the problems of infertilities (35%), abortion (28.4%) and weakness of piglets.
AN ASSOCIATION BETWEEN ON-FARM A.I. AND ABORTION IN A 3,600 SOW HERD

T.W. HEARD
Grove International, Reynolds Hill, Chittoe, Chippenham, Wilts. SN15 2EW

A. KUNAVONGKrit
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Summary

The practice of "on farm" Artificial Insemination, (AI), is becoming increasingly popular in the pig industry and high standards of hygiene and management control must be maintained, if problems are to be avoided.
Short Communication

Study on Boar Infertility: A Case of Late Maturity*

Annop Kunavongkrit** B.Sc., D.V.M., Ph.D., F.R.V.C.S.
Prasert Prateep** B.Sc.

Summary

Late maturity in boar can be diagnosed by the picture of abnormal spermatozoa in infertile mature boar {over 7 months old}. After sometime, this boar may improve semen quality and become fertile.
Study on Boar Infertilities: Epididymal Dysfunction

Annop Kunavongkrit B.Sc., D.V.M., Ph.D., F.R.V.C.S.**
Peerasak Chantaraprateep D.V.M., DTVM, M, Sci. Vet.,
F.R.V.A.C.**
Prasert Prateep B.Sc.*

Summary

Epididymal dysfunction causes infertility or lowering of the fertility in male animal. However, no corresponding investigation of epididymal dysfunction in boars have been reported in Thailand.
Incidence of boar infertility problem in the farms using alternate mating system

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Peerasak Chantaraprateep D.V.M., DTVM, M.Sci. Vet.,
F.R.V.A.C.**
Prasert Prateep B.Sc.**

Summary

The objective of this investigation was to determine the incidence of infertile and/or subfertile boars in the breeding herd using alternate mating technique. The study was conducted in 3 com-
Abstract

Duangjai Suwanchareon* Annop Kunavongkrit**

AN OUTBREAK OF LEPTOSPIROSIS IN A SWINE BREEDING HERD: IT'S DIAGNOSIS, TREATMENT AND ECONOMIC EFFECT

An outbreak of leptospirosis in a 2600 sow breeding herd, in which 5% of the sows aborted, was investigated. Serum samples from 11 aborted sows were examined for leptospira antibodies. Using a Microscopic Agglutination Test (MAT), containing only 12 serovars, no leptospira serovars were detected. However, after using a Microcapsule Agglutination Test (MCAT) kit, a further MAT using the additional three serovars (sejroe, hardjo and bratislava) revealed that the cause of abortion was Leptospira interrogan serovars bratislava and sejroe. After the final diagnosis, the animals were treated by using 800 ppm chlortetracycline in the feed for two weeks, followed by two weeks at 600 ppm. This was combined with systemic antibiotic treatment to all affected and at risk sows and fever, anorexia and abortions ceased. Rats were eradicated and the feeding boxes in all pens were covered, as a preventive measure to control the disease. The economic losses from the outbreak were substantial and including fewer piglets weaned, the value of sows that had to be culled, the cost of medication and the labour required to treat and control the disease. All of these factors have been reported in this study.

Keywords : Swine, leptospirosis, abortion, economic losses
Detection of Antibody Titer Against *Toxoplasma gondii* in Aborted Sows and Gilts in a Swine Herd in Thailand

Padet Tummaruk, Woraporn Sukhumavasi, Sasiwimon Talummuk, Annop Kunavongkrit

**Abstract**

The objective of the present study was to investigate the sero-prevalence of *Toxoplasma gondii* (*T. gondii*) among aborted sows and gilts in a commercial swine herd in Thailand. Data were collected from a swine breeding herd in Thailand between January and November 2008. Abortion rate was increased from 2.2% in January-June 2008 to 9.3% in July-October 2008. Among 132 aborted sows and gilts observed between July to October 2008, the average abortion date was 50.4 days gestation. During abortion, chlortetracycline 600-800 ppm was medicated in sow feed in September for 4 weeks (600 ppm for 2 weeks and 800 ppm for 2 weeks). In October, sulfa-trimetoprim 500 ppm was added to the feed. The number of aborted sows was...
Chinese-like Strain of Porcine Epidemic Diarrhea Virus, Thailand

Suphasawatt Puranaveja, Pariwat Poolperm, Preeda Lertwatcharasarakul, Sawang Kesdaengsakonwut, Alongkot Boonsoongnern, Kitcha Uairong, Pravina Kitikoon, Porjit Choojai, Roongtham Kedkovid, Komkrich Teankum, and RoongrojeThanawongnuwech

Since late 2007, several outbreaks of porcine epidemic diarrhea virus (PEDV) infection have emerged in Thailand. Phylogenetic analysis places all Thai PEDV isolates during the outbreaks in the same clade as the Chinese strain JS-2004-2. This new genotype PEDV is prevailing and currently causing sporadic outbreaks in Thailand.

Segmental enteritis was indicated by segmental disappearance of intestinal lacteal caused by malabsorption in affected intestinal parts (Figure 1, panels C and D). Atrophic enteritis, characterized by blunting of the intestinal villi and sloughing of intestinal epithelium, occurred in all affected piglets (Figure 2, panel A). Immunohistochemical tests, performed by using monoclonal anti-PEDV S protein (JBT Biotechnology Laboratory, Seoul, South Korea), demonstrated dark brown staining in intestinal epithelial cells (Figure 2, panel B). Massive feedback of piglet feces and minced piglet guts to gestating sows was recommended by local veterinary practitioners to prime the sow’s immune response and pass protective immunity to the piglets. At affected farms, the outbreak lasted <3 weeks.

The Study

Samples from 8 provinces (24 farms) in Thailand from December 2007 through March 2008 were submitted to the veterinary diagnostic laboratories of Kasetsart University and Chulalongkorn University. A total of 33 porcine samples were confirmed as positive for PEDV by reverse transcription-PCR (RT-PCR) (4) before virus isolation.
Impact of porcine epidemic diarrhea virus infection at different periods of pregnancy on subsequent reproductive performance in gilts and sows

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Porcine epidemic diarrhea
Reproduction
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ABSTRACT

Reproductive performance of gilts and sows in a swine commercial herd following an outbreak of porcine epidemic diarrhea virus (PEDV) were investigated. A PEDV outbreak was observed in March 2008 in a swine herd in Thailand. The disease was diagnosed by clinical symptoms, gross and histopathology and viral detection using reverse transcriptase-polymerase chain reaction assay. The intestines of the infected piglets were collected, minced and fed to all of the gilts and sows within 2 weeks after the onset of the PEDV outbreak. Reproductive data were collected during a period from January 2007 to July 2008 and were retrospectively evaluated. The farrowing rate (FR), return rate (RR), abortion rate (AR), number of total piglets born per litter (TB), number of piglets born alive per litter (BA), percentage of stillbirth piglets per litter (SB), percentage of mummified fetus per litter (MM)
RETROSPECTIVE AND DESCRIPTIVE RESEARCH
INFLUENCE OF AMBIENT TEMPERATURE ON REPRODUCTIVE EFFICIENCY IN PIGS:
(1) BOAR SEMEN QUALITY

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P. PRATEEP
Porprat Farm, Buriram, Thailand.

Summary

Semen from 12 Duroc boars was collected twice a month during three seasons - April May (summer), August September (rainy) and December January (winter). Immediately after collection, semen was examined for volume, motility, concentration and morphology. Three boars
Body weight loss during lactation and its influence on weaning-to-service interval and ovulation rate in Landrace and Yorkshire sows in the tropical environment of Thailand

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Effect of Season and Outdoor Climate on Litter Size at Birth in Purebred Landrace and Yorkshire Sows in Thailand

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(Received 23 July 2003/Accepted 12 December 2003)

ABSTRACT. The objective of the present study was to retrospectively investigate causes of variation on litter size at birth (total number of piglets born per litter (TB) and number of piglets born alive per litter (BA)) of Landrace (L) and Yorkshire (Y) sows in swine nucleus herds in Thailand. The data included sows farrowed during a four-year period from January 1998 to December 2001. The analyzed data set included observations on 8020 litters from 2199 L sows and 6919 litters from 1680 Y sows. Analysis of variance (ANOVA) was applied for statistical analyses using General Linear Mixed Model (MIXED) procedure of SAS. No breed difference was found for both TB and BA. Farrowing months significantly influenced TB and BA (P<0.001). Sows farrowed in August and September had a lower BA than sows farrowed from November to June (P<0.05). Effect of farrowing months on both TB and BA was more pronounced in primiparous compared with multiparous sows. Average minimum daily temperature during gestation negatively correlated with both TB and BA, average maximum daily temperature during gestation negatively correlated with BA and average daily humidity during gestation negatively correlated with both TB and BA. The correlations were stronger in L than in Y sows.

KEY WORDS: nucleus herd, reproduction, retrospective study, swine.

Effect of temperature and humidity on sperm production in Duroc boars under different housing systems in Thailand

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Effect of temperature and humidity on reproductive performance of crossbred sows in Thailand

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Seasonal Variation in Nuclear DNA Integrity of Frozen–Thawed Spermatozoa from Thai AI Swamp Buffaloes (*Bubalus bubalis*)

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With 1 figure and 4 tables

Received for publication October 16, 2006
Seasonal and breed effects on reproductive parameters in bitches in the tropics: a retrospective study

OBJECTIVES: To investigate the influence of season and breed on reproductive parameters in bitches raised under tropical climatic conditions.

METHODS: Over a seven year period, from 1998 to 2004, 310 oestrous periods of 53 bitches were observed. The dogs were of various breeds; dobermann (number of bitches/number of oestrous cycles) (n=2/19), German shepherd dog (n=35/211), Labrador retriever (n=14/68) and Rottweiler (n=2/12). In 250 of the 310

INTRODUCTION

The influence of season is thought to be an important environmental component of fertility, causing variations in the fertility of many species. High ambient temperatures during the summer, leading to heat stress, are frequently associated with seasonal infertility in both males and females of several species.

In pigs, high ambient temperatures have been reported to compromise repro-

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Age, body weight and backfat thickness at first observed oestrus in crossbred Landrace × Yorkshire gilts, seasonal variations and their influence on subsequence reproductive performance

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Available online 9 June 2006

Abstract

The objective of the present study was to investigate puberty attainment in crossbred Landrace × Yorkshire (LY) gilts reared under tropical conditions and their subsequent reproductive performance. This study was carried out in a 2400-sow herd over a 1-year period. A total of 696 crossbred LY replacement gilts were included. Faecal samples from 214 gilts were collected to determine the faecal progesterone profiles around
Relationships among specific reasons for culling, reproductive data, and gross morphology of the genital tracts in gilts culled due to reproductive failure in Thailand

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Abstract

The present study aims to investigate genital organs of replacement gilts culled due to reproductive failure, and the relationship between gross morphological findings and historical reproductive data. The study was conducted from July 2005 to September 2006 and included a random sample of 200 genital organs from six swine herds in Thailand. Historical data and the reasons for culling were analyzed. Gross morphological examinations focused on the normality and abnormalities of the ovaries, as well as the
The association between growth rate, body weight, backfat thickness and age at first observed oestrus in crossbred Landrace × Yorkshire gilts

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Received 12 September 2007; received in revised form 20 December 2007; accepted 4 January 2008
Available online 18 January 2008

Abstract

The present study aims to investigate the association between growth rate (GR), body weight (BW), backfat thickness (BF) and age at first observed oestrus in crossbred Landrace × Yorkshire (LY) replacement gilts in the tropics. The study was carried out on five commercial swine herds in Thailand between 2004 and 2006.
Seasonal influences on the litter size at birth of pigs are more pronounced in the gilt than sow litters

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(Revised MS received 19 October 2009; Accepted 2 November 2009; First published online 4 March 2010)

SUMMARY

The aim of the present study was to use data from herds to demonstrate the degree of seasonal influence on litter size at birth in gilts compared to sow parities 2, 3–5 and older (parities ≥6) in a conventional, open-housing system for commercial pig herds in the northeastern part of Thailand. Data were obtained during a 3-year period from July 2005 to June 2008. The data analysed included observations on 25,835 litters from 8,100 sows. Total number of piglets born per litter (TB), number
Influence of repeat-service and weaning-to-first-service interval on farrowing proportion of gilts and sows

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Tropical climate
Conception rate
Repeat-service

ABSTRACT

The present study was performed to evaluate different components of reproductive failure after service under a tropical climate and to investigate the influence of repeat-service and delayed wean-to-service interval (WSI) on subsequent fertility in gilts and sows. The study was conducted in four commercial swine breeding herds in the northeastern part of Thailand. Data were collected during a 3-year period from July 2005 to June 2008. A total of 30,058 insemination records from 9037 gilts and sows was included. On average, the farrowing proportion (FP) was 81.9% and adjusted FP (excluding gilts/sows culled after service) was 85.3%. The reasons for the failure to farrow included return-to-oestrus 9.4%, abortion 1.7%, not being pregnant 1.0% and not-in-pig 2.0%. Non-repeat-service females had 83.7% FP, while those that experienced repeat-serviced for 1, 2 and ≥3 times had 71.2%, 65.5% and 58.4%, respectively.
METHODOLOGICAL RESEARCH
Brief Communication

CHRONICAL VENOUS CATHETERIZATION FOR FREQUENT BLOOD SAMPLING IN UNRESTRAINED PIGS

Very frequent collection of blood is necessary when endocrinological studies are performed in the porcine species. The conventional blood sampling technique by puncture of vessels (Muirhead 1981) cannot be considered for long term studies with frequent sampling in the pig.
Rodriguez, H. and Kunavongkrit, A.

Chronic catheterization for frequent blood sampling in unrestrained pigs


From 1983-present 53 citation
EXPERIMENTAL CLINICAL RESEARCH
A Study on the Number of Recovered Spermatozoa in the Uterine Horns and Oviducts of Gilts, after Fractionated or Non-Fractionated Insemination

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(Received 4 December 2001/Accepted 8 October 2002)
Sperm distribution in the reproductive tract of sows after intrauterine insemination

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Contents

The purpose of the present study was to compare the number of spermatozoa obtained from different parts of the oviducts and the uterine horns of sows after intrauterine insemination (IUI) and conventional artificial insemination (AI), 24 h after insemination. Twelve crossbred (Landrace × Yorkshire) multiparous sows were used in the experiment. The sows were examined for standing oestrus using a back pressure test and number per dose resulted in the same conception rate and litter size, under farm conditions, as conventional AI (Watson and Behan 2002). However, Rozeboom et al. (2004) found that IUI with ≤1 × 10⁹ spermatozoa per dose resulted in a smaller litter size compared with a conventional AI with 4 × 10⁹ spermatozoa per dose.

Sperm distribution within the female reproductive tract following AI has been extensively studied in pigs.
REVIEW LITERATURES
Pig reproduction in South East Asia

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Abstract

Asia with over half the population in the world has a thriving agriculture, a large part of which is devoted to pig production. The efficiency of production varies from country to country and is largely the legacy of whether the country relies on backyard farms using native breeds or intensive
Management and sperm production of boars under differing environmental conditions

Annop Kunavongkrit\textsuperscript{a,\ast}, Annop Suriyasomboon\textsuperscript{b,c}, Nils Lundeheim\textsuperscript{c}, Terry W. Heard\textsuperscript{a}, Stig Einarsson\textsuperscript{d}

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THANK YOU FOR YOUR ATTENTION