1. Assessment of ovarian activity in captive goral (Naemorhedus griseus) using noninvasive fecal steroid monitoring

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9. Quantification of contamination levels and particular risk of Salmonella spp. in pigs in slaughterhouses in Chiang Mai and Lamphun provinces, Thailand

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11. Loads and antimicrobial resistance of Campylobacter spp. on fresh chicken meat in Nueva Ecija, Philippines

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13. Distribution, quantitative load and characterization of Salmonella associated with swine farms in upper-northern Thailand
14. Physiological effects of water temperatures in swimming toy breed dogs. [Susi(cdotless)akli(cdotless)?i(cdotless)ni(cdotless)n yüzürlülen küçük cüsseli köpeklerdeki fizyolojik etkileri]

15. Clinical study on the effects of diacerein and diacerein combined with chondroitin sulfate on canine hip osteoarthritis. [Diacerein ve kondroitin sülfat eklenmi? diacerein'in köpek kalça osteoartritisindeki etkileri üzerine klinik bir çali(dotless)?ma]


17. Gender, season and management affect fecal glucocorticoid metabolite concentrations in captive goral (naemorhedus griseus) in Thailand

18. Use of blue-greenish yellow fluorescence test on feeds and its association with aflatoxin M1 contamination in bulk tank milk

19. The effect of M-phase stage-dependent kinase inhibitors on inositol 1,4,5-trisphosphate receptor 1 (IP3R1) expression and localization in pig oocytes

20. Effect of alternate day collection on semen quality of Asian elephants (Elephas maximus) with poor initial fresh semen quality
Assessment of ovarian activity in captive goral (Naemorhedus griseus) using noninvasive fecal steroid monitoring

1Thitaram C., 2Khonmee, J., 3Pongpliachan P., 4Tipkantha W., 4Siriaroonrat B., 5Kongphoemphun A., 6Thumasanukul D., 7Punyaporwithaya V., 7Khonmee J., 8Brown J.L., 9Taya K., 6Rojanasthien S.

ABSTRACT

To date, there is no information on gonadal steroidogenic activity of female goral (. Naemorhedus griseus), a threatened species of Thailand. Captive goral populations have been established to produce animals for ex situ conservation and reintroduction, but as yet none are self-sustaining. The objectives of the present study were to (1) determine the influence of season on ovarian steroidogenic function; and (2) examine the relationship between gonadal hormone excretion and sexual behaviors throughout the year. Fecal samples were collected 5 to 7 days/wk for 15 months from 8 adult females housed at Omkoi Wildlife Breeding Center in Thailand and analyzed for ovarian steroid metabolites using validated enzyme immunoassays. Observations of sexual behaviors and mating were conducted each morning for 30 min/session. Based on fecal estrogen and progestagen metabolite concentrations, the overall estrous cycle length was about 21 days, with a 2- to 3-day follicular phase and an 18- to 20-day luteal phase. Sexual behaviors, most notably tail-up, increased for 2 to 3 days during the time estrogens were elevated during mating. Fecal progestagens were elevated during luteal phases and increased further during gestation, which lasted approximately 7 months. The lactation period was 5 months, and females were anestrus for 2 to 5 of those months, with the exception of one that cycled continuously throughout. Two females conceived around 2 months postpartum and so were pregnant during lactation. Birth records over the past 21 years indicated young are born throughout the year. This combined with the hormonal data suggests that female gorals are not strongly seasonal, at least in captivity, although there was considerable variation among females in estrogen and progestagen patterns. In conclusion, fecal steroid metabolite monitoring is an effective means of assessing ovarian function in this species and will be a useful tool for breeding management and planned development of assisted reproductive techniques such as artificial insemination and embryo transfer. © 2014 Elsevier Inc.
In vitro virucidal and virustatic properties of the crude extract of cynodon dactylon against porcine reproductive and respiratory syndrome virus

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ABSTRACT

The in vitro virustatic and virucidal tests of the crude extract of Cynodon dactylon against infection with porcine reproductive and respiratory syndrome virus (PRRSV), a cause of major devastating pig disease, were described. Crude extract of C. dactylon was prepared for cytotoxicity on tissue-culture cells that were used to measure virustatic and virucidal activities against PRRSV. Crude extract of C. dactylon at 0.78 mg/mL showed no cytotoxicity on the cell line, and at that concentration significantly inhibited replication of PRRSV as early as 24 hours post infection (hpi). C. dactylon also inactivated PRRSV as determined by immunoperoxidase monolayer assay (IPMA) compared to the control experiments. In summary, the present study may be among the earliest studies to describe virustatic and virucidal activities of C. dactylon crude extract against PRRSV in vitro. Extracts of C. dactylon may be useful for PRRSV control and prevention on pig farms. © 2014 Kidsadagon Pringproa et al.
Diet composition, food intake, apparent digestibility, and body condition score of the captive Asian elephant (Elephas maximus): A pilot study in two collections in Thailand

ABSTRACT

Limited data are available regarding the nutrition and feeding of captive Asian elephants in range countries. In this study, feeding regimens of two collections in northern Thailand and their actual diets shaped by availability of forage and mahout preferences were assessed for nutritional quality. The composition of dietary intake, fecal output, and the dietary regimen were individually recorded for 5 days in 10 elephants. The proportion of forage in the diet represented 41 to 62% of the dry matter intake (DMI) in one collection whereas in the other collections it varied between 68 and 72%. Between 8.5 and 24% of the diet consisted of commercial pellets, and hulled rice represented up to 25% of the DMI in one collection. Sugar cane, corn cobs, and fruits such as bananas were eaten in smaller amounts. Body condition scores and weights were measured, which revealed that nine animals were in good condition. Representative samples of each food as well as fecal samples were analyzed for dry matter, crude protein, fat, crude fiber, gross energy, ash, calcium, and phosphorus. Diet adequacy was assessed by calculating the digestible nutrients in the rations and by comparing them to the recommendations from literature. The digestible energy (DE) intake varied between 0.6 and 1.4 megajoules (MJ) per kg0.75 per day; therefore, higher than the estimated recommendations of 0.65 MJ per kg0.75 per day for nine of the elephants. In all elephants the crude protein intake was less than the maintenance recommendations and ranged between 6.01 and 7.56% of the DMI. Calcium intake was low in one collection and there was an inverse calcium : phosphorus ratio, which was inadequate. The present study adds to the knowledge of captive elephant diets in Asia and is a starting point for further research, which is necessary to design optimum diet plans for captive Asian elephants in Thailand. © American Association of Zoo Veterinarians.
Prevalence and antimicrobial susceptibility of Listeria monocytogenes on chicken carcasses in Bandung, Indonesia

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ABSTRACT

This study was conducted to determine the prevalence and quantify the number of Listeria monocytogenes in fresh chicken carcasses sold in traditional markets and supermarkets in Bandung, West Java, Indonesia, and to determine the antimicrobial resistance patterns of the isolated L. monocytogenes strains. The overall prevalence of L. monocytogenes in chicken carcasses was 15.8% (29/184). When comparing samples from traditional markets and supermarkets, no significant difference in the L. monocytogenes prevalence was detectable (15.2 versus 16.3%). Of the samples, 97.3% had L. monocytogenes counts <100 CFU/g, 2.2% had L. monocytogenes counts between 101 and 1,000 CFU/g, and 0.5% had L. monocytogenes counts of 1,001 to 10,000 CFU/g. Of the isolates, 27.6% were resistant to at least one of the 10 antimicrobials tested, with the major resistant phenotypes to penicillin (17.2%), ampicillin (6.9%), and erythromycin (6.9%). All 29 isolates recovered in this study were grouped into the molecular serogroup Iib, comprising the serovars 1/2b, 3b, and 7. Copyright ©, International Association for Food Protection.
Serum vitamin D, calcium, and phosphorus concentrations in ponies, horses and foals from the United States and Thailand

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ABSTRACT

Vitamin D is essential in calcium and phosphorus regulation, bone physiology, cell proliferation and epithelial integrity. Literature on vitamin D in growing horses is sparse, and the effect of age on vitamin D has not been evaluated in equids in the United States or in tropical countries. The goal of this study was to determine if there was an effect of age on serum 25(OH)D3 concentrations in equids in the US (Ohio/Kentucky) and Thailand (Chiang Rai and Kanchanaburi) during the same time of the year. Blood samples were collected from healthy ponies (n=21) and Thoroughbred foals (n=20), yearlings (n=10), and horses (n=20) in Thailand and from Thoroughbred foals (n=10) and horses (n=17) in the US. Serum concentrations of 25(OH)D3, calcium and phosphorus were measured. In both countries, serum 25(OH)D3 concentrations were lower in foals than in yearlings and adult horses. Serum 25(OH)D3 concentrations were higher in horses than in ponies in Thailand, but were not different between horses from either country. Calcium concentrations were not different between groups or location. In both countries, phosphorus concentrations were higher in foals than in older groups; however, were not different between ponies and horses. This study shows that independent of geography there are age-related differences in 25(OH)D3 concentrations in horses and further confirms that 25(OH)D3 concentrations are lower in horses compared to other species. The information will serve as the basis for future clinical studies and to help understand better the pathophysiology of equine disorders associated with calcium and phosphorus dysregulation. © 2014 Elsevier Ltd.
Seasonality of fecal androgen and glucocorticoid metabolite excretion in male goral (Naemorhedus griseus) in Thailand

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ABSTRACT

There is no information on the endocrinology of Chinese goral (Naemorhedus griseus), a high priority species for captive breeding and reintroduction in Thailand. This study characterized fecal androgen and glucocorticoid metabolites in male goral at Omkoi Wildlife Sanctuary to investigate seasonal relationships. Fecal samples were collected 3 days/week for 1 year from eight adult males. Mean androgen metabolite concentrations were greater (P
Occurrence and characterization of livestock-associated methicillin-resistant Staphylococcus aureus in pig industries of northern Thailand

ABSTRACT

This study was conducted to determine the prevalence of livestock-associated methicillin-resistant Staphylococcus aureus (LA-MRSA) in pigs, farm workers, and the environment in northern Thailand, and to assess LA-MRSA isolate phenotypic characteristics. One hundred and four pig farms were randomly selected from the 21,152 in Chiang Mai and Lamphun provinces in 2012. Nasal and skin swab samples were collected from pigs and farm workers. Environmental swabs (pig stable floor, faucet, and feeder) were also collected. MRSA was identified by conventional bacterial culture technique, with results confirmed by multiplex PCR and multi locus sequence typing (MLST). Herd prevalence of MRSA was 9.61% (10 of 104 farms). Among pigs, workers, and farm environments, prevalence was 0.68% (two of 292 samples), 2.53% (seven of 276 samples), and 1.28% (four of 312 samples), respectively. Thirteen MRSA isolates (seven from workers, four from environmental samples, and two from pigs) were identified as Staphylococcal chromosomal cassette mec IV sequences type 9. Antimicrobial sensitivity tests found 100% of the MRSA isolates resistant to clindamycin, oxytetracycline, and tetracycline, while 100% were susceptible to cloxacillin and vancomycin. All possessed a multidrug-resistant phenotype. This is the first evidence of an LA-MRSA interrelationship among pigs, workers, and the farm environment in Thailand. © 2014 The Korean Society of Veterinary Science.
The Global One Health Paradigm: Challenges and Opportunities for Tackling Infectious Diseases at the Human, Animal, and Environment Interface in Low-Resource Settings


ABSTRACT

Zoonotic infectious diseases have been an important concern to humankind for more than 10,000 years. Today, approximately 75% of newly emerging infectious diseases (EIDs) are zoonoses that result from various anthropogenic, genetic, ecologic, socioeconomic, and climatic factors. These interrelated driving forces make it difficult to predict and to prevent zoonotic EIDs. Although significant improvements in environmental and medical surveillance, clinical diagnostic methods, and medical practices have been achieved in the recent years, zoonotic EIDs remain a major global concern, and such threats are expanding, especially in less developed regions. The current Ebola epidemic in West Africa is an extreme stark reminder of the role animal reservoirs play in public health and reinforces the urgent need for globally operationalizing a One Health approach. The complex nature of zoonotic diseases and the limited resources in developing countries are a reminder that the need for implementation of Global One Health in low-resource settings is crucial. The Veterinary Public Health and Biotechnology (VPH-Biotec) Global Consortium launched the International Congress on Pathogens at the Human-Animal Interface (ICOPHAI) in order to address important challenges and needs for capacity building. The inaugural ICOPHAI (Addis Ababa, Ethiopia, 2011) and the second congress (Porto de Galinhas, Brazil, 2013) were unique opportunities to share and discuss issues related to zoonotic infectious diseases worldwide. In addition to strong scientific reports in eight thematic areas that necessitate One Health implementation, the congress identified four key capacity-building needs: (1) development of adequate science-based risk management policies, (2) skilled-personnel capacity building, (3)
accredited veterinary and public health diagnostic laboratories with a shared database, and (4) improved use of existing natural resources and implementation. The aim of this review is to highlight advances in key zoonotic disease areas and the One Health capacity needs. © 2014 Gebreyes et al.
Quantification of contamination levels and particular risk of Salmonella spp. in pigs in slaughterhouses in Chiang Mai and Lamphun provinces, Thailand

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ABSTRACT

Salmonella spp. is one of the important foodborne pathogens, and the slaughtering process is recognized as a potential point of contamination and the spread of the pathogens. The three objectives of this study are first, to quantify the contamination levels of Salmonella spp. in pig skins and carcasses, second, to evaluate the outcomes from different pig supply sources and different practices at three critical steps (scalding, splitting, and washing) for Salmonella spp. contamination, and third, to assess risk of Salmonella spp. contamination in pork products after slaughtering level. The study was performed in three representative slaughterhouses in Chiang Mai and Lamphun provinces, Thailand. Investigation conducted from May 2013 through October 2013 found the overall prevalence and contamination levels mean to be 11.85% and 0.34 MPN/cm², respectively. There was no statistically significant in Salmonella spp. prevalence and contamination levels detected with different patterns at the slaughterhouses which were supplied pigs from either co-operative or integrated farms. Factors found to reduce Salmonella spp. loads on carcasses included good practices, e.g., regular changing of water in the scalding tank after each batch and the use of chlorine in the washing step. Risk of Salmonella spp. contamination of pork products at the final stage of slaughtering was nearly 10%. Good practices and proper hygiene measures should be applied to minimize the risk of Salmonella spp. exposure in the slaughtering line, which can reduce the contamination pressure downstream at retail shops as well as for end consumers. © 2014, Hokkaido University. All rights reserved.
Characterization of avian influenza H5N1 virosome

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ABSTRACT

The purpose of this study was to prepare and characterize virosome containing envelope proteins of the avian influenza (H5N1) virus. The virosome was prepared by the solubilization of virus with octaethyleneglycol mono (n-dodecyl) ether (C12E8) followed by detergent removal with SM2 Bio-Beads. Biochemical analysis by SDS-PAGE and western blotting, indicated that avian influenza H5N1 virosome had similar characteristics to the parent virus and contained both the hemagglutinin (HA, 60-75 kDa) and neuraminidase (NA, 220 kDa) protein, with preserved biological activity, such as hemagglutination activity. The virosome structure was analyzed by negative stained transmission electron microscope (TEM) demonstrated that the spherical shapes of vesicles with surface glycoprotein spikes were harbored. In conclusion, the biophysical properties of the virosome were similar to the parent virus, and the use of octaethyleneglycol mono (n-dodecyl) ether to solubilize viral membrane, followed by removal of detergent using polymer beads adsorption (Bio- Beads SM2) was the preferable method for obtaining avian influenza virosome. The outcome of this study might be useful for further development veterinary virus vaccines. © 2013 PVJ.
Loads and antimicrobial resistance of Campylobacter spp. on fresh chicken meat in Nueva Ecija, Philippines

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ABSTRACT

This study was performed to determine the prevalence and to semiquantify Campylobacter spp. on chicken meat samples at 4 selected local wet markets in Nueva Ecija, Philippines, and to determine the antimicrobial resistance patterns of the Campylobacter isolates. Out of 120 chicken meat samples, 57 (47.5%) were Campylobacter spp. positive. The majority of isolated Campylobacter strains were identified as Campylobacter coli (54.4%) and 45.6% as Campylobacter jejuni. Most of these positive samples (52.6%) showed a very high quantitative Campylobacter contamination (most probable number > 2,400/g, lower confidence limit 580/g). For antimicrobial resistance testing, 44 C. coli/jejuni isolates were tested using the agar disk diffusion method. Out of these, 77.3% were resistant to ampicillin, followed by ciprofloxacin (70.4%), tetracycline (54.6%), erythromycin (20.2%), and gentamicin (11.4%). Of the isolates, 36.4% (n = 16) were resistant to 1 antimicrobial agent, 34.1% (n = 15) were resistance to 3 antimicrobial agents, 13.6% (n = 6) to 2 antimicrobial agents, 9.1% (n = 4) to 4 antimicrobial agents, and 6.8% (n = 3) to all 5 antimicrobial agents tested. Our data demonstrate a high contamination of fresh chicken meat with Campylobacter spp. at retail in the Philippines. The detected high Campylobacter prevalences and quantitative loads on chicken meat at retail in the Philippines highlight the need to implement efficient intervention measures along the food chain and to encourage sanitary handling of poultry meat. © 2014 Poultry Science Association Inc.
Quarter, cow, and farm risk factors for intramammary infections with major pathogens relative to minor pathogens in Thai dairy cows

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AbSTRACT

A cross-sectional study was carried out from May to September 2011 on 35 smallholder dairy farms in Chiang Mai, Thailand, to identify the quarter, cow, and farm factors that relate to intramammary infections (IMI) from major specified pathogens, compared to infections from minor pathogens. Data on general farm management, milking management, and dry cow management were recorded for each herd. Quarter milk samples were collected from either clinical or subclinical mastitis quarters. Dependent variables were binary data defining the specified major pathogens, including Streptococcus agalactiae (7.1%), Streptococcus uberis (9.4%), Streptococcus dysgalactiae (4.0%), and other streptococci (16.7%), as a case, and all minor pathogens as a control, in each dependent variable. The occurrence of S. agalactiae IMI was lower in first-parity cows and cows with short milking time. Cows with body condition score (BCS) 500,000 cells/ml had higher occurrence of S. dysgalactiae IMI. For other streptococci, quarters having clinical mastitis, BCS
Distribution, quantitative load and characterization of Salmonella associated with swine farms in upper-northern Thailand

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ABSTRACT

This study was conducted to analyze the prevalence and quantitative loads of Salmonella spp. on pig farms in Chiang Mai, Lamphun, Thailand to assess loading levels before slaughtering. The serotype diversity, antimicrobial-resistance pattern and pulse-field type of Salmonella spp. were also characterized to assess the dynamic propagation of the pathogen. The Salmonella-positive prevalence was 246/805 (30.56%), and the quantitative loads varied from 1.48-4.04 Log10MPN/g, with a mean ± standard deviation of 2.11 ± 0.57. AMP/S/TE (ampicillin/streptomycin/tetracycline) was the highest frequency antimicrobial resistance pattern found in this study. In addition, Salmonella Rissen was the primary serotype in this region. PFGE results indicated the occurrence of infection by cross contamination among pig farms. Our study showed that pork is easily contaminated with this pathogen. Farm control programs must be based on strict biosecurity and hygienic measures, which could further reduce the contamination pressure at slaughterhouses or retail shops. © 2014 The Korean Society of Veterinary Science.
Physiological effects of water temperatures in swimming toy breed dogs [Suscakli?ni?ni?n yüzürlüen küçük cüsseli köpeklerdeki fizyolojik etkileri]

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ABSTRACT

The purpose of the present study was to examine the effect of water temperature on heart rate and respiratory rate during swimming, as well as changes in rectal temperature, blood glucose and blood lactate before and after swimming. Twenty-one small breed dogs (male = 9, female = 12) were used as subjects of this study. Dogs swam for 20 min in different water temperatures: 25°C, 33°C and 37°C. Heart rate and respiratory rate were monitored every 5 min during swimming. Blood samples were obtained before and after swimming for analysis of glucose and lactate levels. Rectal temperature was measured before and after swimming. The results showed that dogs that swam in 25°C water had the highest heart rate and serum glucose level (significant difference, P
Clinical study on the effects of diacerein and diacerein combined with chondroitin sulfate on canine hip osteoarthritis [Diacerein ve kondroitin sulfat eklenmi? diacerein'in köpek kalça osteoartritisindeki etkileri üzerine klinik bir çali{dotless}?ma]

Nganvongpanit K., Boonsri B., Sripratak T., Markmee P., Kongtawelert P., Nganvongpanit, K.,

ABSTRACT

This study aimed to evaluate the effects of diacerein (DAR) and DAR combined with chondroitin sulfate (CS) for treatment of canine hip osteoarthritis (OA) in a 6-month clinical trial. Client-owned dogs included in the study consisted of 27 males and 25 females, aged 59.43±17.05 months old and weighing 17.63±5.19 kg. The dogs were randomly divided into five groups: DAR50 (administration of DAR 50 mg daily); DAR100 (DAR 100 mg daily); DAR50/CS (DAR 50 mg + CS 525 mg daily); DAR100/CS (DAR 100 mg + CS 525 mg daily); and CS (CS 525 mg daily). Dogs were re-examined monthly for 6 months after initiation of treatment. The assessment protocol included clinical scores and radiographic findings. Blood samples were collected three times (pre-treatment, and after 3 and 6 months) for evaluation of the serum biomarker, CS-WF6. Dogs treated with DAR showed statistically significant improvements (P<0.05) in lameness, joint mobility, pain on palpation, weight-bearing, and overall clinical score at 3, 6, 5, 4, and 4 months, respectively, after the start of treatment. Side effects, including diarrhea and dark-colored urine, were found in all groups receiving DAR. After the 3rd month, the level of serum CS-WF6 in the CS group was significantly elevated (P<0.05), while the other four groups showed a significant decrease (P<0.05). The results showed that DAR 50 or 100 mg had a similarly positive therapeutic effect on dogs with osteoarthritis. The use of DAR alone or in combination with CS resulted in decreased degradation of OA cartilage.

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Evaluation of strategies for the eradication of pseudorabies virus (Aujeszky's Disease) in commercial swine farms in Chiang-Mai and Lampoon Provinces, Thailand, using a simulation disease spread model

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ABSTRACT

Several strategies for eradicating Pseudorabies virus (Aujeszky's disease) in Chiang-Mai and Lampoon Provinces, Thailand, were compared using a computer simulation model, the North American Animal Disease Spread Model (NAADSM). The duration of the outbreak, the number of affected herds and the number of destroyed herds were compared during these simulated outbreaks. Depopulation, zoning for restricted movement and improved detection and vaccination strategies were assessed. The most effective strategies to eradicate Pseudorabies as per the findings from this study are applying depopulation strategies with MOVEMENT RESTRICTIONS in 3-, 8- and 16-km ZONES surrounding infected herds and enhancing the eradication with vaccination campaign on 16-km radius surrounding infected herds. © 2012 Blackwell Verlag GmbH.
Gender, season and management affect fecal glucocorticoid metabolite concentrations in captive goral (Naemorhedus griseus) in Thailand


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ABSTRACT

Chinese goral (Naemorhedus griseus) are a threatened species in Thailand and the focus of captive breeding for possible reintroduction. However, little is known of their biology or what factors in the captive environment affect welfare. Our objective was to determine the impact of gender, season, and management on goral adrenal activity. We hypothesized that differences in fecal glucocorticoid concentrations would be related to animal density. Fecal samples were collected 3 days/week for 1 year from 63 individuals (n = 32 males, 31 females) at two facilities that house the majority of goral in Thailand: Omkoi Wildlife Sanctuary (Omkoi), an off-exhibit breeding center that houses goral in individual pens (16 pens; n = 8 males, 8 females) and in small family groups (8 pens; n = 8 males, 8 females); and the Chiang Mai Night Safari (NS), a zoo that maintains 31 goral (n = 17 males, 14 females) in one large pen. Glucocorticoid metabolite concentrations were higher in male than female goral at Omkoi throughout the year, and there was a seasonal effect on adrenal activity (p<0.05). Goral at Omkoi and NS were used to test the effect of animal density on fecal glucocorticoid excretion of goral housed in similar-sized enclosures. Overall, the highest levels were found at NS (n = 31 adults/pen; 27 m2 per animal) compared to Omkoi (n = 2 adults/pen; 400 m2 per animal) (p<0.05). Overall findings support our hypothesis that animal density and aspects of the captive environment impact adrenal steroid activity in captive goral. In addition, gender and season also had significant effects on glucocorticoid metabolite production. Potential stressors pertaining to the welfare of this species were identified, which will guide future efforts to improve management and create self-sustaining and healthy populations of this threatened species.

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Use of blue-greenish yellow fluorescence test on feeds and its association with aflatoxin M1 contamination in bulk tank milk

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ABSTRACT

The objectives of this study were to use the blue-greenish yellow fluorescence (BY) test for aflatoxin M1 (AFM1) contamination in bulk milk and to examine the association between AFM1 contamination and environmental and feed management factors. The study was conducted March to May of 2011 with samples from 82 small holder dairy farms belonging to a single dairy cooperative in Chiang Mai province, Thailand. On the day of milk sample collection, samples of all feed used for milking cows and data on feed characteristics, feed management, and environmental factors also were collected at each farm. High-performance liquid chromatography was used to determine AFM1 concentrations in milk samples, and samples with AFM1 concentrations above the limit of detection were considered AFM1 contaminated. Fisher’s exact tests were used to determine the association between AFM1 contamination in milk and farm management factors, feed management factors, and fungal contamination in feeds (as determined with the BY test). A multilevel logistic regression model was used to create the final model of factors associated with AFM1 contamination in milk. Feeds with fungal contamination (as determined by the BY test), high levels of cracked particles of commercial concentrate pellets, sunlight in the feed storage room, storage of commercial concentrates on the farm for more than 1 month, and more than 5% difference in relative humidity between the feed storage room and the barn holding lactating cows were associated with AFM1 contamination in milk. The BY test was useful for screening cattle feed for fungal contamination, and the results of this test in conjunction with other factors can be used to monitor and prevent AFM1 contamination in milk on small holder dairy farms. © International Association for Food Protection.
At fertilization, inositol 1,4,5-trisphosphate receptor type 1 (IP3R1) has a crucial role in Ca2+ release in mammals. Expression levels, localization and phosphorylation of IP3R1 are important for its function, but it still remains unclear which molecule(s) regulates IP3R1 behavior in pig oocytes. We examined whether there was a difference in localization of IP3R1 after in vitro or in vivo maturation of pig oocytes. In mouse oocytes, large clusters of IP3R1 were formed in the cortex of the oocyte except in a ring-shaped band of cortex adjacent to the spindle. However, no such clusters of IP3R1 were observed in pig oocytes and there was no difference in its localization between in vitro and in vivo matured oocytes. We next tried to clarify which factor(s) regulates IP3R1 localization, phosphorylation and expression using M-phase stage-dependent kinase inhibitors. Our results show that treatments with roscovitine (p34cdc2 kinase inhibitor) or U0126 (mitogen-activated protein kinase inhibitor) did not affect IP3R1 expression or localization in pig oocytes, although the latter strongly inhibited phosphorylation. However, treatment with BI-2536, an inhibitor of polo-like kinase 1 (Plk1), dramatically decreased the expression level of IP3R1 in pig oocytes in a dose-dependent manner. From these results, it is suggested that Plk1 is involved in the regulation of IP3R1 expression in pig oocytes. © 2014 Japanese Society of Animal Science.
Effect of alternate day collection on semen quality of Asian elephants (Elephas maximus) with poor initial fresh semen quality

ABSTRACT

In captivity, male Asian elephants often yield poor quality semen after transrectal manually assisted semen collection; however, the reasons for the disappointing semen quality are not clear. Here we test the hypothesis that accumulation of senescent spermatozoa is a contributory factor, and that semen quality can therefore be improved by more frequent ejaculation. To this end we investigated the effect of collecting semen five times on alternate days, after a long period of sexual rest, on semen quality in Asian elephants known to deliver poor semen during infrequent single collections. All eight bulls initially displayed a high incidence of detached sperm heads and low percentages of motile (close to 0%) spermatozoa. After semen collection on alternate days, the percentages of detached sperm heads, and head and mid-piece abnormalities, were reduced significantly (p