UPM

UNIVERSITI PUTRA MALAYSIA

BERILMU BERBAKTI

# FFM

# Best Student Project Seminar

## FACULTY OF VETERINARY MEDICINE 2020

# PROGRAMME *1st September 2020, Auditorium FPV*

**2:00 PM** ARRIVAL OF GUESTS

**2:15 PM** NATIONAL ANTHEM "NEGARAKU"
PUTRA GEMILANG, KEJAYAAN ABADI

**2:20 PM** DOA RECITAL

**2:25 PM** OPENING REMARKS BY DEAN, FACULTY OF VETERINARY MEDICINE
Y. BHG. PROF. DR ABDUL RAHMAN OMAR

**2:40 – 4:30 PM** FINALIST PRESENTATIONS

**FINALIST 1**
**ALIAH AZIMAH BINTI ABD RAZAK**
MOLECULAR DETECTION OF SCHMALLENBERG VIRUS (SBV) IN SMALL RUMINANTS IN TERENGGANU AND NEGERI SEMBILAN, MALAYSIA

**FINALIST 2**
**AIK YIN ZHENG**
MOLECULAR DETECTION OF PORCINE CIRCOVIRUS TYPE 3 IN SELECTED PIG FARMS IN MALAYSIA

**FINALIST 3**
**DAKSHAKARE VELLU**
IN VITRO ANTHELMINTHIC ACTIVITY OF INDIAN BORAGE (*PLECTRANTHUS AMBOINICUS)* EXTRACT AGAINST L3 STAGE STRONGYLES IN SMALL RUMINANTS

**FINALIST 4**
**LOW CHERN WEY**
LIPID SIGNALLING PATHWAY GENE EXPRESSION IN HEP-G2 CELLS SUPPLEMENTED WITH EXOGENOUS LIPIDS AND STEVIA EXTRACT

**FINALIST 5**
**LUQMAN KHALID JAVED**
VERIFYING THE RELIABILITY OF AN INFRARED THERMOMETER USAGE IN A SMALL ANIMAL HOSPITAL WARD SETTING

**4:30 PM** ANNOUNCING THE WINNER OF FFM BERHAD (FFM) SEMINAR 2020
AWARDS GIVING

**5:00 PM** REFRESHMENTS
PROGRAMME END

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Assalamualaikum wrt. wbt. and Salam Sejahtera,

*THE DEAN'S MESSAGE*

On behalf of the Faculty of Veterinary Medicine (FPV), Universiti Putra Malaysia, it gives me great pleasure to warmly welcome the representative from the Federal Flour Mills (FFM) Berhad Malaysia, the five finalists, his/her supervisor and all participants to this half-day Seminar for the FFM Best Student Project which is organised by Faculty of Veterinary Medicine and supported by FFM Berhad Malaysia. The seminar is organised with the aim to select the best final year project (FYP) presentation amongst year 5 Doctor of Veterinary Medicine (DVM) students who had conducted and presented their final year project last semester under the VPD4999 course.

The final year project provides DVM students an insight into research in the veterinary fields. It enhances the skills of the students in many aspects including their communication skill which is very important for their Day-One Competency. The project is conducted within a 5-week period during the semester break, followed by presentation of the project findings in the FYP Seminar which is held at the beginning of the 9th semester of their study. Examiners amongst lecturers at the Faculty evaluate their presentation and select five best projects to be shortlisted as the finalists for the FFM Student Award. The award will be presented to the winner during the Oath Taking Ceremony which is held every year at the faculty on the UPM Convocation Day.

Before this, the finalists for the FFM Student Award presented their project findings in a yearly Seminar of Recent Advances in Animal Health and Production (RAS) organised by CENTRAS UPM. Due to the COVID-19 pandemic, the RAS 2020 has been postponed and hence for this year the FFM Best Student Project Seminar is organised for the first time and separately from the RAS. All of us have been affected by the COVID-19 pandemic. We are all in this together and each of us need to play a role in curbing the spread of COVID-19. This seminar can also be viewed on an online platform. Thank you very much to FFM Berhad Malaysia for the support and all of you for making this event a success.

I wish you all a productive seminar.

PROFESSOR DR. ABDUL RAHMAN OMAR
DEAN
FACULTY OF VETERINARY MEDICINE
UNIVERSITI PUTRA MALAYSIA

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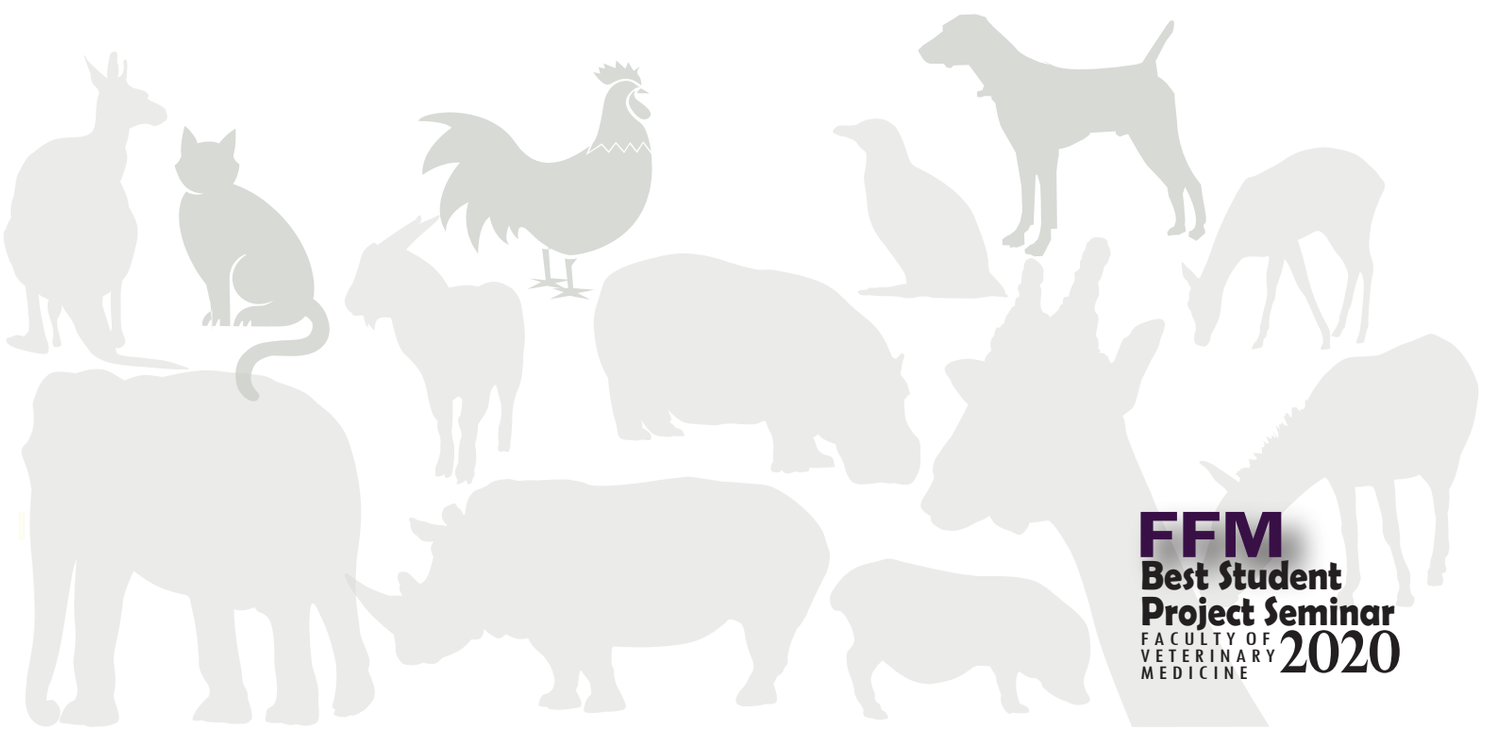
# Finalist
## ABSTRACTS

**FFM BEST STUDENT PROJECT SEMINAR 2020**

SEPTEMBER 1, 2020 (TUESDAY)
AUDITORIUM
FACULTY OF VETERINARY MEDICINE
UNIVERSITI PUTRA MALAYSIA



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# MOLECULAR DETECTION OF SCHMALLENBERG VIRUS IN SMALL RUMINANTS IN TERENGGANU AND NEGERI SEMBILAN, MALAYSIA

Aliah Azimah Binti Abd Razak

Supervisor : Prof. Dato' Dr Mohd Azmi Mohd Lila

The Schmallenberg virus (SBV) was first discovered in Germany in 2011. Since then, the vector-borne virus has spread to various parts of the world causing clinical manifestations in ruminants such as abortions, stillbirths and congenital malformations. This study intended to perform molecular detection of SBV in Malaysia. A total of 87 serum samples collected from selected farms in Terengganu and Negeri Sembilan were analyzed for SBV by using reverse-transcription polymerase chain reaction (RT-PCR). The primers and positive control SBV gene sequences for the test were designed and optimized to target the L-segment of SBV. Total RNA from serum samples was extracted, with its concentration measured, prior analysis. Upon analysis by gel electrophoresis none of the 87 serum samples demonstrated positive results for SBV. This finding, however, does not rule out the absence of SBV in sampled animals, as seroconversion had been detected in number of serum samples indicating that those animals were infected at some point of time in their life. The results could be attributed to the undetectable viraemic period of SBV following short duration of active virus infection cycle or the presence of neutralizing antibodies that eliminate virus particles from blood circulation. Thus, it is highly recommended for the samples to be collected from acutely infected animals. Alternatively, the external placental fluid and umbilical cord of infected offspring could be more suitable for successful molecular detection of SBV.

**Keywords**: Schmallenberg virus, molecular detection, RT-PCR

# MOLECULAR DETECTION OF PORCINE CIRCOVIRUS TYPE 3 IN SELECTED PIG FARMS IN MALAYSIA

Aik Yin Zheng

Supervisor : Prof. Dr Siti Suri Arshad
Co-Supervisor : Assoc. Prof. Dr Ooi Peck Toung

Porcine circovirus type 3 (PCV3) belongs to the genus Circovirus in the family *Circoviridae*. Many countries including Malaysia have reported the presence of PCV3 in the swine herd. PCV3 infection is associated with different clinical syndromes which includes Porcine Dermatitis and Nephropathy Syndrome (PDNS), reproductive failure, porcine respiratory disease complex (PRDC), cardiac and multisystemic inflammation and sometimes in apparently healthy animals. However, previous study on PCV3 detection in Malaysia was only on archived lung samples of clinically ill post-weaned pigs. The current study aimed to detect PCV3 in clinically ill field animals and apparently healthy animals of a wider age groups inclusive of weaner, grower, and finisher. Using convenient sampling method, 46 clinically ill animals and 18 healthy animals from farms of different states were selected for this study. Organs collected include inguinal and mesenteric lymph node, lung, spleen, tonsil and kidney. The organs collected were subjected to PCR assay, partial sequencing and subsequently phylogenetic analyses. Specific primers targeting the capsid gene (OFR2) of PCV3 was used. Result revealed that 28.26% (13/46) of the clinically ill field animals were positive for PCV3 while all healthy animals were negative. Nucleotide sequencing indicated that the 6 local PCV3 strains of this study were highly homologous with each other. Phylogenetic analyses showed that all Malaysian strains were most likely grouped into 2 clusters and were evolutionary closer to USA, Spain and Germany strains. It was speculated that Malaysian strains originated from the same source through the importation of breeder animals from various countries including USA, Spain and Germany. In conclusion, PCV3 is prevalent in clinically ill field animals but not in apparently healthy animals. All the 6 local PCV3 obtained from this study were identical to the previously reported local PCV3 sequences as they were clustered near to each other in the same clades.

**Keywords**: Porcine circovirus type 3, Malaysia, PCR, sequencing, phylogenetic analyses

# IN VITRO ANTHELMINTHIC ACTIVITY OF INDIAN BORAGE (PLECTRANTHUS AMBOINICUS) EXTRACT AGAINST L3 STAGE STRONGYLES IN SMALL RUMINANTS

Dakshakare Vellu

Supervisor : Dr Sharifah Salmah Syed Hussain
Co-Supervisor : Dr Nor Azlina Abdul Aziz
: Dr Khairul Farihan Kasim

Parasitic gastroenteritis (PGE) is a prominent cause of mortality and morbidity in small ruminants in Malaysia. PGE control relies greatly on the use of anthelmintic drugs (AHD). However, the unwarranted prophylactic usage of AHD has led to anthelmintic resistance against many drug groups especially the benzimidazole group. Therefore, the search for ethnoveterinary options has gained popularity. This study aims to assess the anthelminthic activity of Indian borage extract (IBE), against L3 strongyle larvae in sheep. A total of 300 L3 larvae were used in 5 groups (IBE at 10, 30 and 50 mg/ml, ivermectin and distilled water) with one replicate each. The percentage mortality of L3 larvae was recorded at timed intervals at 0 min, 10 mins, 30 mins, 1 hr, 2 hrs, 4 hrs and 24 hrs. Results showed that the concentration of IBE exhibited a trend of increasing mortality in a dose dependent manner. The highest percentage of mortality was observed in the 50/mg/mL treatment group whereby 97% mortality was recorded within 4 hrs, resulting in only 13% lower average mortality rate than the positive control (ivermectin). All treatment groups were statistically significant from the control groups ($p < 0.05$). In conclusion, IBE displays anthelmintic activity and has the potential to be used as an alternative for the control of PGE in sheep.

**Keywords**: *Plectranthus amboinicus*, Ethnoveterinary, Anthelminthic, Nematode, Small ruminants

# LIPID SIGNALLING PATHWAY GENE EXPRESSION IN HEP-G2 CELLS SUPPLEMENTED WITH EXOGENOUS LIPIDS AND STEVIA EXTRACT

Low Chern Wey

| | | |
|---|---|---|
| Supervisor | : | Dr Mokrish Ajat |
| Co-Supervisor | : | Assoc. Prof. Dr Hazilawati Hamzah |
| | : | Assoc. Prof. Dr Intan Safinar Ismail |


Atherosclerosis is caused by dyslipidaemia such as hypercholesterolaemia or hypertriglyceridaemia. Although simvastatin has been used widely to control hypercholesterolaemia in humans, it is of interest to seek alternative treatment, especially in the veterinary field. Stevia (*Stevia rebaudiana*) was found to have a hypolipidaemic effect, thus we hypothesized that cells supplemented with stevia extract will not express the same lipid signalling pathway gene as cells supplemented with only exogenous lipid. This study has been designed to observe the effect of stevia on mammalian cell lines Hep-G2 supplemented with commercial stevia extract and stevia derived glycosides like stevioside or Rebaudioside A. Glyceraldehyde-3 phosphate dehydrogenase (GAPDH) was chosen as a housekeeping gene. The expression of genes involved in lipid signalling pathway such as low-density lipoprotein receptor (LDLr), 3-hydroxy-3methylglutaryl-coenzyme A reductase (HMGCR), scavenger receptor protein class b type 1 (SCAR-B1), acyl-coenzyme A:cholesterol acyltransferase (ACAT2), perilipin 2 (PLIN2), proprotein convertase subtilisin/kexin type 9 (PCSK9) were assessed using gel electrophoresis after RT-PCR was performed. LDLr were quantified using RT-qPCR and significantly showed an increase of 10.8, 14.0, 19.1 fold in the positive control, high dose commercial stevia, and high dose stevioside respectively.

**Keywords**: Dyslipidaemia, HEP-G2 cells, LDLr, RT-PCR, Stevia

# VERIFYING THE RELIABILITY OF AN INFRARED THERMOMETER USAGE IN A SMALL ANIMAL HOSPITAL WARD SETTING

Luqman Khalid Javed

Supervisor : Prof. Dr Noordin Mohamed Mustapha
Co-Supervisor : Assoc. Prof. Dr Gayathri Thevi Selvarajah

Body temperature measurement is an integral part of physical examination for veterinarians. Rectal temperature is very good at predicting core temperature and is currently considered the gold standard in veterinary medicine. However, this method is not without limitations, tends to lag behind core temperature, and is considered uncomfortable for the animal. Technology advancements in veterinary medicine tend to follow trends from human medicine. In recent years, infrared thermography has begun replacing digital thermography for measuring temperature in humans. Such products intended for human use produced unsatisfactory results when used in animals. Recently, certain companies have started designing infrared thermometers designed specifically for animal use. The current experiment was designed to test the reliability of an infrared thermometer designed specifically for use on animals. The thermometer was tested to see if it could reliably report an animal's temperature, environmental temperature, and animal feed temperature. The experiment involved 210 paired readings from felines and canines, 100 paired readings of environmental temperature, and 100 paired readings of feed temperature. Data was analyzed using SPSS 25 and NCSS using Correlations, Chi Square, and Bland-Altman plots. Results showed that the thermometer was very reliable (r=0.951) for measuring environmental temperature, reliable (r=0.824) for measuring feed temperature, but not very reliable (r=0.611) for measuring animal temperature. However, using a built-in correction function within the thermometer showed that it yielded extremely reliable results once calibrated towards a specific animal. Although it is rapid and offers more comfort to the animal, it cannot be conveniently and reliably used from patient to patient. Nevertheless, it can be a useful tool to have for specific patients that cannot have their rectal temperature easily measured.

**Keywords**: Temperature, Thermometer, Infrared, Reliable

# ORGANIZING COMMITTEE

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- PROF. DR ABDUL RAHMAN OMAR

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- MUHAMMAD HAIKAL HAFIZ MOHD RAZALI
- TENGKU NOR HAFZAN TENGKU MUDA

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- MOHD SHAHRUL FITRI MOHD YUSOP

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**PHOTOGRAPHER**
- MUHAMAD ZAID NOR AKAHBAR

**DOA RECITAL**
- ROHAIZAD YAAKOB

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