PHILIPPINE COLLEGE OF SWINE PRACTITIONERS

23rd Pinoy Pork Challenge

Morning Session:

SWINE REPRODUCTIVE EFFICIENCY: FINDING SOLUTIONS FOR BOAR PROBLEMS & THE INFERTILE SOW.

Afternoon Session:

INDUSTRY ASSESSMENT OF THE RISKS, LIKELIHOOD OF TRANSMISSION AND OUR READINESS AGAINST AFRICAN SWINE FEVER VIRUS

Novotel Hotels & Resorts
Araneta Center, Cubao, Quezon City
October 2, 2019

Fostera™ PRRS

IN THE WAR AGAINST PRRS
CROSS-PROTECTION
HOLDS THE LINE!

HOLDING THE LINE

zoetis

PCSP Pledge

I do solemnly swear
that I will uphold the honor
of the Philippine College of Swine Practitioners
and voluntarily pledge to abide by its tenets and teachings.

I pledge my loyalty and commitment
to its philosophy and objectives ever aware of the
responsibility to eliminate improprieties.

I vow to cherish the dignity of being a swine practitioner.
To do faithfully all my duties with integrity,
perseverance and honesty.
No matter where destiny may bring me.

I shall continuously strive to increase my professional knowledge
and skills to improve service and value to the swine industry.

I vow to exercise all the skills and abilities which I have acquired
for the betterment of myself
for the welfare of the College
and for the service of my country.
So help me GOD.

PHILIPPINE COLLEGE OF SWINE PRACTITIONERS

MISSION

The PCSP as the leading and dynamic Filipino swine practitioners committed to deliver affordable high quality swine practice and services that significantly will create value and enrich the lives of our farmers, business partners and pig welfare as well.

VISION

The PCSP is a group believing in a set of values and ethical standards required of a swine veterinarian. A guiding light…. A spark of dynamism…. A common bond that will strengthen the core of professional practice.

BECOME A PCSP DIPLOMATE!

- 10 YEARS in swine practice
- Formal letter of INTENT to serve and give back to the swine industry.
- A PAPER on a research, case study or innovation in the field of swine medicine and production.

Approach any PCSP member for guidance on the application process.

"IGNITE, DEBATE and INSPIRE"

How we can best serve the swine industry?

How we can create awareness and prevent animal diseases?

How we can take the industry to the next level to cope with advances in technology and compete globally?

How do we raise the bar of our own practice as veterinarians?

How can we create awareness and prevent swine diseases?

Join us and IGNITE discussions for the betterment of swine industry.

Join the DEBATE on different perspectives and benchmark with peers.

And be the one to INSPIRE to implement practices to foster synergy, innovation & harmony in the industry.

Established in 1991 as the Philippine College of Swine Practitioners (PCSP), it has been renamed as the Pinoy Porcine Practitioners, Inc. in 2016.

Philippine College of Swine Practitioners is legally registered as Pinoy Porcine Practitioners, Inc. in Securities and Exchange Commission (SEC)

The organization is the recognized Collegial Body of the PVMA, with the Specialty Board granting Diplomate and Fellow status to its qualified members.

Philippine College of Swine Practitioners

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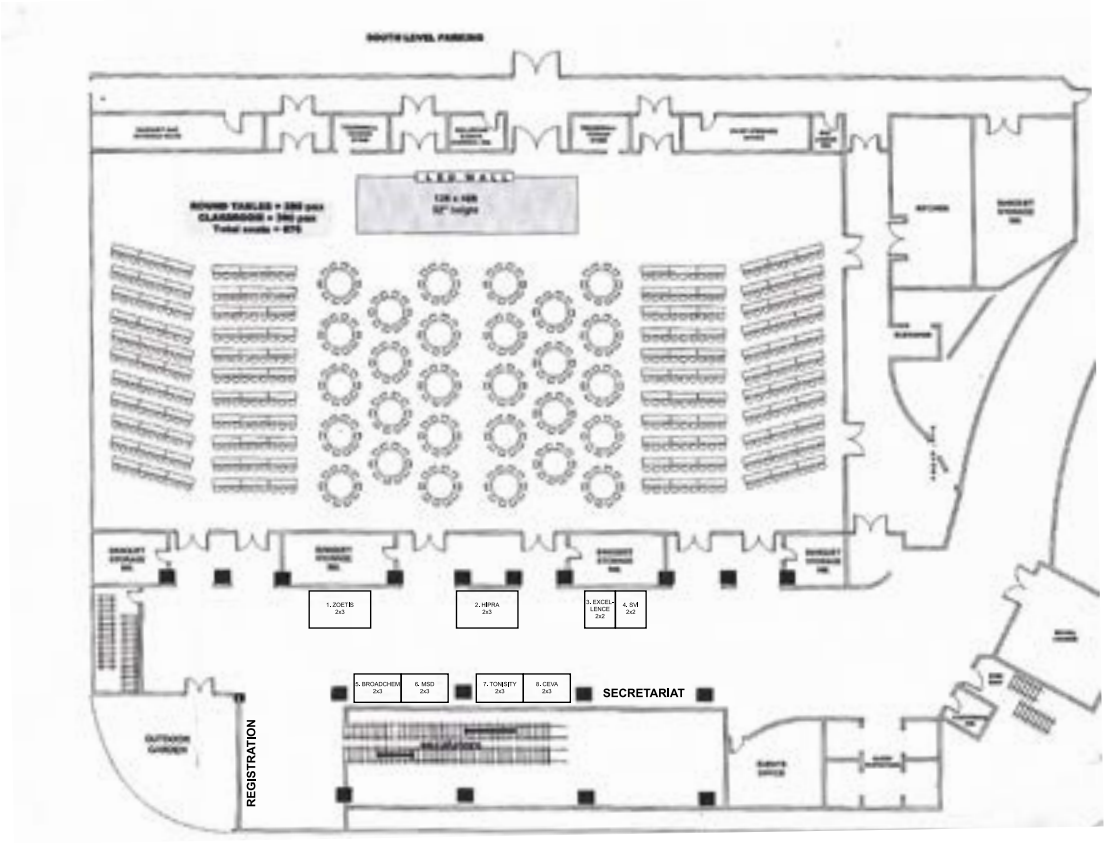
23rd Pinoy Pork Challenge

October 2, 2019
Novotel, Cubao, Quezon City



REGISTRATION GUIDE

General Registration

Step 1

Pre-Registered Delegates
Approach PCSP Registration Table

Major Sponsor's Delegates
Approach your Sponsor's booth

Only 2 steps and you are done!

Step 2

Sign Attendance

Get Convention Kits

Wear ID – will be checked at Entrance

Use Meal Stubs during breaks

We encourage participation in surveys.

Your feedback is valuable to us.

CPD Earners

Only for those professionals needing CPD points.

Register professional information in online portal
https://pcsp.org.ph/ppc-2019/
Skip this step if done already.

Step 3

Get RFID for attendance.
Tap once for IN/OUT
Upon first entry, and upon exit for departure.

Participate in the on-line surveys.
Links will be sent by SMS / email.

Para sa propesyon at bayan!

Step 4

Return RFID.
Capture of attendance data.

Release of Certificate of CPD points
by PVMA within 2 months.

Affiliate of the

In partnership with

Message

Republic of the Philippines
S E N A T E

Cynthia Villar
Senator

Greetings to all the members of the Philippine College of Swine Practitioners on the occasion of the 2019 Pinoy Pork Challenge!

I commend all the individuals and organizations involved in organizing this annual swine technical conference, which is truly timely, given the challenge that the African Swine Fever has brought to the Philippine swine industry.

I am confident that the exchange of information and insights will truly benefit the participants and attendees especially industry players, veterinary practitioners, farm owners, managers and workers.

We must continue to prioritize and safeguard public health, especially in the presence of threats from animal diseases abroad, such as the African Swine Fever. I also urge all of you to continue to enhance your knowledge and knowhow. This yearly conference is very good step in that direction. Keep it up!

Moreover, I am urging industry players to keep on working towards enhancing the numerous competitive advantages that we have. Our staunch commitment to safety has made the Philippines free from Foot and Mouth Disease (FMD) since 2010. The World Organization for Animal Health also bestowed on the Philippines the highest level of recognition as a country free from FMD without vaccination.

I am confident that you are all on top of the new developments and I commend all of you as you continue to enhance your expertise and knowledge in your fields of endeavor. More power!

CYNTHIA A. VILLAR

5/F SENATE OF THE PHILIPPINES. GSIS BUILDING, FINANCIAL CENTER, PASAY CITY, PHILIPPINES
TEL. NOS. 552-6715 / 552-6601 to 80, Loc. 6507, 6508 to 6511 * TELEFAX: 552-6734 * EMAIL ADDRESS: sencynthiavillar@gmail.com

Message

Republic of the Philippines
Department of Agriculture
OFFICE OF THE SECRETARY
Elliptical Road, Diliman, Quezon City 1101
Philippines

I wish to extend my warmest felicitations to the officers and members of the Philippine College of Swine Practitioners as you conduct the **2019 Pinoy Pork Challenge.**

We at the Department of Agriculture are privileged to support and take part in this event, which for years has been providing a venue for scientific learning and collaboration amongst the country's swine farmers and experts. This year, it is worth noting that the gathering focuses on the assessment of risks, likelihood of transmission and readiness against emerging diseases, amidst renewed threats to the local swine industry.

Thus, we at the DA strongly endorse the staging of this initiative that provides us an opportunity to improve cooperation in the field of information and technical assistance, even as we intensify our monitoring and strict biosecurity measures against old and emerging animal diseases. Our ultimate shared goal is clear: Protect and sustain the industry that provides livelihood and incomes to our countrymen and contributes to food security of the entire nation.

We therefore look forward to a stronger partnership with the Philippine College of Swine Practitioners as we wish you a successful and fruitful gathering.

Sama-sama nating itaguyod ang Bagong Pananaw sa Agrikultura: Isang Pilipinas na may matibay na seguridad sa pagkain at mga magsasaka at mangingisdang may maunlad at masaganang buhay.

Mabuhay ang Philippine College of Swine Practitioners at ang Pinoy Pork industry!

WILLIAM D. DAR, Ph.D.
Acting Secretary

Message

Republic of the Philippines
Professional Regulation Commission
Manila

My warmest greetings to the Philippine College of Swine Practitioners (PCSP) on the event of your *23rd Pinoy Pork Challenge (PPC 2019)*. This year's conference offers methodological approaches and advances in the most urgent and developing global concern of swine endemic virus for maximum preparedness and control as the swine production and processing in the archipelago has been increasing each year at a greater rate.

Being the second largest contributor to the country's agriculture, Filipino swine practitioners and raisers venturing into this sphere should capture and invest on beneficial information, systems and trainings; applicable technologies concerning swine marketing productivity; exportation and trade opportunities and challenges; and readiness and prevention to the emergent swine diseases, especially the African Swine Fever (ASF), a severe infectious disease affecting domestic and wild hogs, to secure the swine production and processing stability and continuity from the backyard and commercial farms and be one the leading purveyors in the global swine market.

The conference is an opportune event for all concerned stakeholders to engage with the experts and acquire empirical data and systematic methods of preventing and immediately responding to the entry of ASF virus in the country. Therefore, I commend the Philippine College of Swine Practitioners for taking proactive actions and solutions to render preventive training frameworks and cost-effective measures to enrich biosecurity and sustainable livelihood opportunities and practices in raising livestock.

Your unswerving commitment to deliver significant and worthwhile programs of swine practices and services in the Philippines, which incidentally also promote the Professional Regulation Commission's Continuing Professional Development programs for all professionals, is indeed truly laudable.

May this conference serve its utmost purpose to pursue a healthy-giving and safe environment for all.

More power and Mabuhay!

Ar YOLANDA D. REYES, FUAP, PIEP, HFAIA,
Apec Architect, Asean Architect, Likha Awardee
***Commissioner,* Professional Regulation Commission**

Message

Republic of the Philippines
Professional Regulation Commission
Manila

PROFESSIONAL REGULATORY BOARD OF VETERINARY MEDICINE

Greetings to the members of Philippine College of Swine Practitioners (PCSP) and congratulations for successfully organizing the 2019 Pinoy Pork Challenge. The activity is very timely given the challenges to the swine industry by the current outbreaks of hog diseases and the ever present risk of the introduction of transboundary or foreign hog diseases to the country.

Assistance in informing stakeholders of government policies to prevent entry of such foreign hog diseases and its actions to prevent business disruption in the face of disease challenges is important to inspire continued investor confidence in the swine industry.

Veterinarians, industry producers, farm owners, managers and husbandry workers alike, will benefit from updates on emerging swine diseases and current methods of control. Veterinarians attending the event will acquire not only advanced knowledge but will likewise receive Continuing Professional Development credits for their efforts. The Professional Regulation Commission thanks the PCSP for its continued support the CPD program of the PRC.

This event augurs well for the Filipino veterinarians who face the challenge of an ASEAN region and the rest of the world where trade boundaries will be blurred and professional mobility is enhanced. The knowledge and skills to be learned during the event will serve them in good stead in an expectedly competitive environment.

In behalf of the PRB of Veterinary Medicine, we wish you the best of luck and keep up the good work!

MA. ELIZABETH D. CALLANTA, DVM, MSc
Chairman
PRB of Veterinary Medicine

Message

Republic of the Philippines
Department of Agriculture
BUREAU OF ANIMAL INDUSTRY
Visayas Avenue, Diliman, Quezon City

My warmest greetings and congratulations to the organizers, guests and participants of the 23rd Pinoy Pork Challenge (PPC).

Your organization, the Philippine College of Swine Practitioners (PCSP) plays a decisive role in empowering our swine raisers by distinctly communicating useful and relevant information about health and production. As we work to protect the swine industry from emerging challenges including the African Swine Fever (ASF) disease, our government relies on your organization's excellence and commitment to provide technical and mobilization support.

Allow me to commend your organization for equipping the Filipino veterinarians and hog workers with the latest knowledge on swine farming and disease management. With this activity, I challenge you to breed more skilled workers through your seeds of excellence. May this be a catalyst for more fruitful ventures and strategic linkages.

Together, let our dynamic partnership enrich the lives of our hog raisers. Let us stay united in our quest for a better animal industry!

RONNIE D. DOMINGO, DVM, MSc.
Officer-in-Charge, Director

Message

PHILIPPINE VETERINARY MEDICAL ASSOCIATION
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My warmest greetings to the Philippine College of Swine Practitioners as you hold your 2019 Pinoy Pork Challenge on October 2, 2019 at Novotel Manila Araneta Center Cubao, Quezon City.

Being at the forefront of the promotion of the swine industry is indeed very challenging especially with the threat of the dreaded African Swine Fever. Your role in maintaining the health and welfare of animals is vital for the sustainable growth of the swine industry.

Technical discussions and seminars focusing on ASF are happening almost everywhere in the country. It is through your experience and through the collaborative efforts of all sectors of the industry – whether it be the academe, businessman, farmers and government – that we formulate a system to prevent the entry of this devastating disease.

May this annual activity reinforce your commitment to promote and safeguard the health and welfare of the swine industry.

On behalf of the PVMA National Officers and Board of Directors, I congratulate the officers and members of Philippine College of Swine Practitioners for this event. I wish you all the best, let's work together as one!

DR. FRANCISCO M. VILELA JR.
President

Message

PHILIPPINE COLLEGE OF SWINE PRACTITIONERS

It is with great pride and honor that I welcome you to our 23rd Pinoy Pork Challenge! I am happy and thankful of you for taking time off your busy schedules and for many who traveled far distances to be here for this event.

As we gather to discuss ways we can help to find solutions to some of the many existing issues we are facing, I urge you to keep focus on our goal and mission to learn and adapt new things moving forward. For the past years, the Philippine Swine industry's growth has remained flat despite new technologies and gadgets. Hence, the PPC 23 will tackle reproductive problems with the boar and breeding sows. The second part will bring to the fore the current problem on African Swine Fever, a very lethal disease of pigs and discuss the actions that the government, veterinarians, owners, and other stakeholders are mapping out to prevent the entry and control of this disease.

The result of this event is very important in identifying measures that can mitigate the adverse impacts of this issues as well as help us to better cope with similar shocks in the future. I am therefore convinced that we will greatly benefit from the wealth of ideas that will come out of this conference. With an impressive agenda and distinguished panel of presenters, we are in for a stimulating session! Mabuhay!

ZOILO M. LAPUS, DVM MS FPCSP, FPCVFP
President, PCSP

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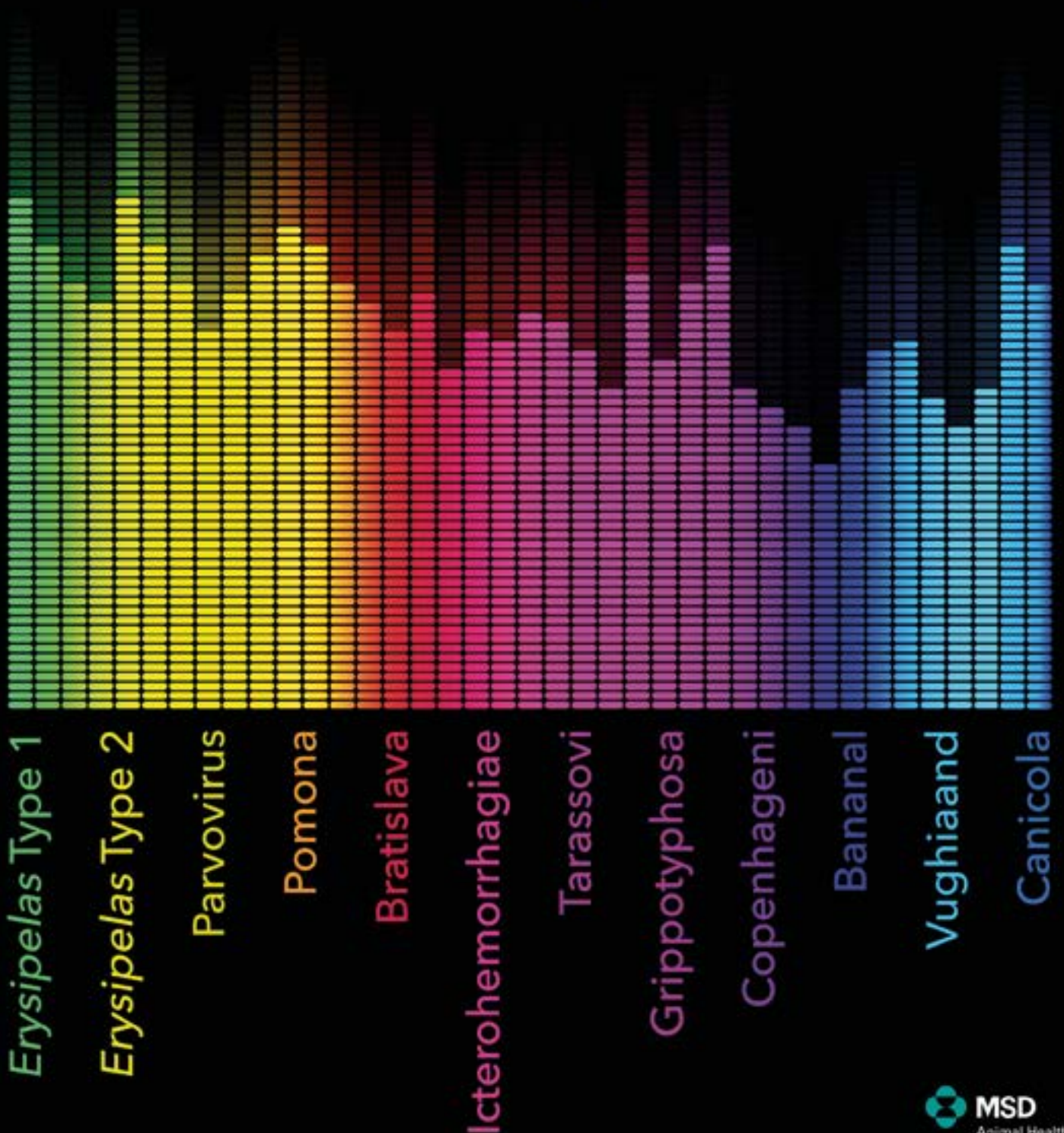

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PHILIPPINE COLLEGE OF SWINE PRACTITIONERS

23rd Pinoy Pork Challenge

Novotel Hotels & Resorts
Araneta Center, Cubao, Quezon City
October 2, 2019

Dr. Marcial Ramos Keynote Lecture

Practical Ways to Improve Reproductive Efficiency
SeungYoon Lee, DVM, PhD
Zoetis Philippines, Inc.

Swine Reproductive Efficiency: Finding Solutions for the Problem Boar and Infertile Sow
Moderator: Maria Cristina C. San Esteban, DVM, DipPCSP

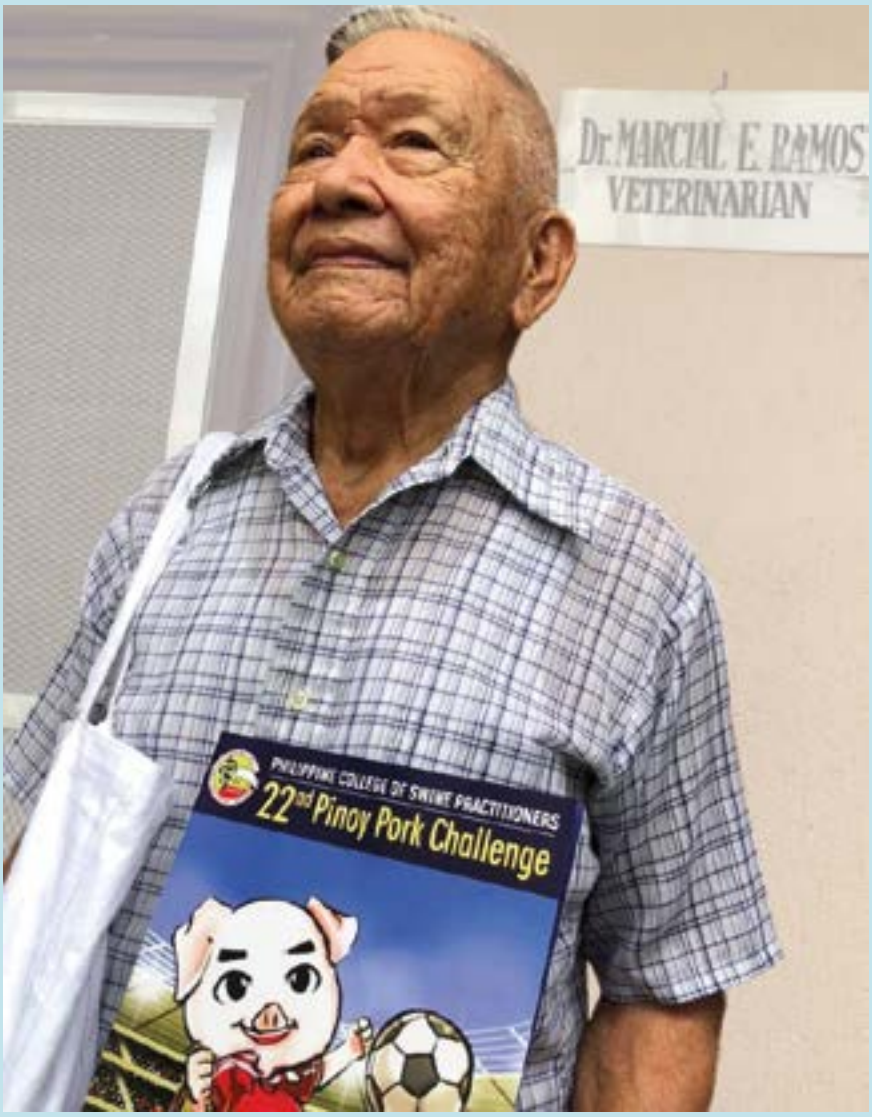
Disease or Not a Disease: Neglected Infectious Infertility in Sows	Leonardo Domingo Ellerma, DVM MSD Animal Health
Unleashing your Breeders Potential to Increase Littersize and Farrowing Rate	José Antonio García Ruvalcaba, DVM, MSc Broadchem Philippines Biopharma Corporation
Induction of better immunity response against PRRSv in Breeders through different routes of administration for effective control of reproductive related issues caused by PRRSv	Dachrit Nilubol, DVM, MSc, PhD Hipra Philippines Inc.
Improving Reproductive Efficiency: What is the point if those Piglets don't go to Market?	Peter K. S. Chu, MSc, MBA, PhD Tonisity
Boar Problems and Swine Infertility	John Carr, PhD, DPM, DipECPHM, MRCVS Ceva Animal Health (Philippines.) Inc
PCSP-Pork Champ ***Best Student Research 2019***	Dr. Lygene Harmony C. Culimay CVSM, Central Luzon State University Thesis Adviser: Dr. Clarissa Yvonne J. Domingo

Industry Assessment of the Risks, Likelihood of Transmission and our Readiness against African Swine Fever Virus
Moderator: Michael Felipe E. Quilitis, DVM, DipPCSP

Swine Industry Roadmap: Initiating Stakeholder Engagement	Ruth Miclat-Sonaco, DVM, MPM, FPCSP International Training Center on Pig Husbandry-Agricultural Training Institute
Philippine National Standards (PNS) on Code of Good Animal Husbandry Practices (GAHP) for Swine	Georlene P. Orbista, BSA Bureau of Agriculture and Fisheries Standards Department of Agriculture
Biosecurity in the Backyard Segment: How Do We Level Up?	Giovanni Sevilla, DVM, MDA, DipPCSP Philippine College of Swine Practitioners
Reviewing Downtime Requirements	Angel Manabat, DVM, FPCSP Philippine College of Swine Practitioners
Government Updates on Border Control and Protection Programs against ASFv	Ronnie Domingo, DVM, MSc Bureau of Animal Industry, Department of Agriculture
Latest Update on ASF Virus Likelihood of Transmission and Possible Influx including through Animal Feed Ingredients under Transboundary Shipping Models	Eugenio Mende, DVM, MSc, DipPCSP ASF TWG on Feed Ingredients
An Opportune Time for Philippines to Define its Own Qualitative Risk Assessment Criteria	Carolyn Benigno, DVM, MDM, MVPHMgt Philippine College of Veterinary Epidemiologists
Philippine ASF Preparedness Plans: On Day Zero and In Ground Zero	Daphne Jorca, DVM, MSc Animal Health and Welfare Division Bureau of Animal Industry, Department of Agriculture
Critical Thinking Session	Specialty Board, PCSP

PHILIPPINE COLLEGE OF SWINE PRACTITIONERS

1st DR. MARCIAL RAMOS KEYNOTE LECTURE



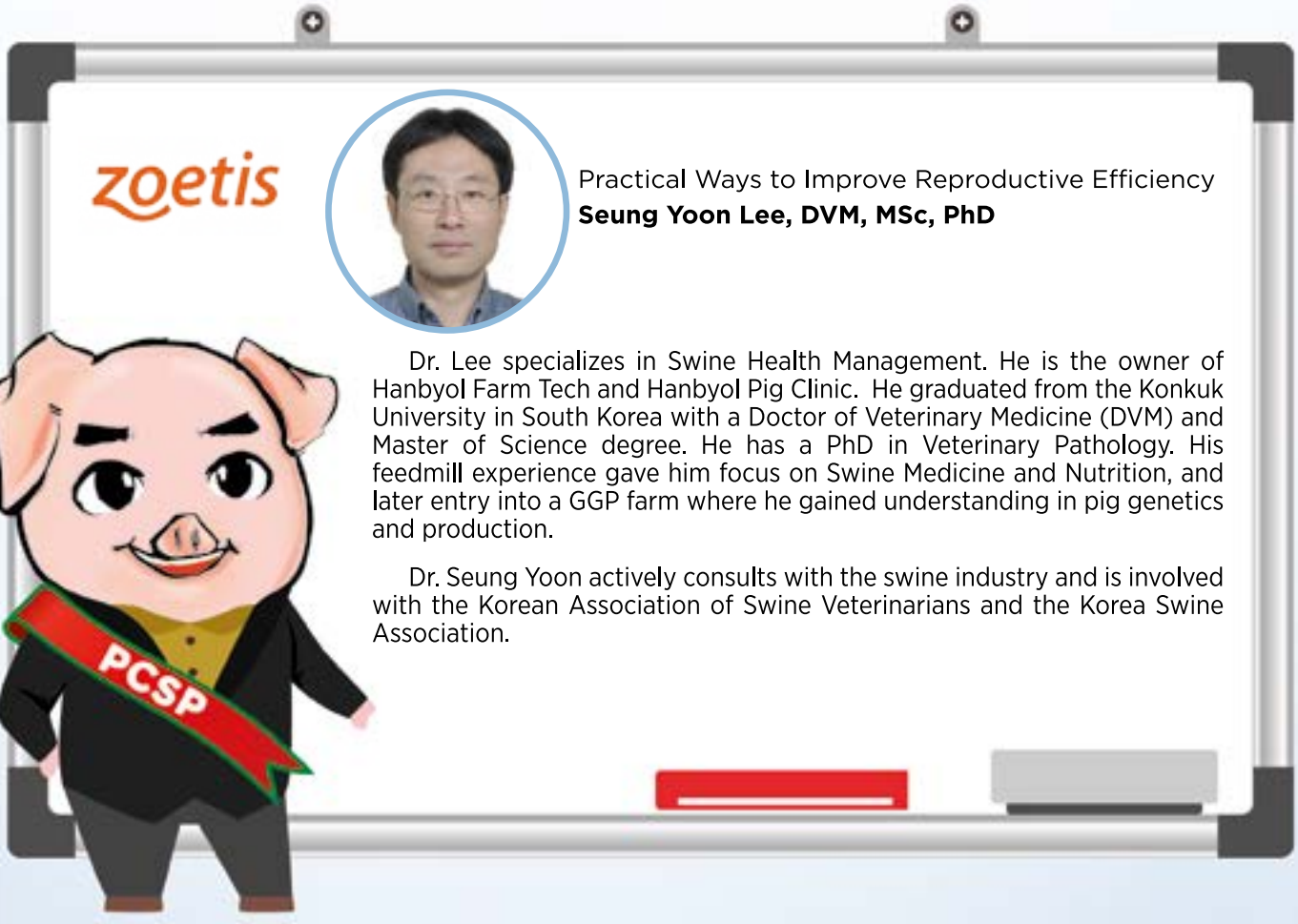
-Dr. Marcial Ramos, 1st PCSP President

The PCSP is launching the DR. MARCIAL RAMOS KEYNOTE LECTURE to honor PCSP's First President.

To celebrate a life dedicated to swine practice and to continue to inspire the next generation of veterinarians.

The topic chosen to lead the discussions for the 23rd Pinoy Pork Challenge and the morning session's theme – "Swine Reproductive Efficiency: Finding Solutions for Boar Problems and the Infertile Sow".

In Partnership with zoetis



Practical Ways to Improve Reproductive Efficiency

SeungYoon Lee, DVM, PhD, Swine Consultant
HanbyolFarmTech
leevet@hanmail.net

Key words: replacement rate, F2 gilt, sow batch board, PRRS, gilt management

Reproductive efficiency can be achieved by culling poor sows and replacing with gilts well acclimatized to the health status of the sow herd. The board of sow batch is useful to maintain the number of sows per batch and to replace the poor sow strategically. Gilt development focusing on heat induction management and PRRS acclimatization should be prioritized to ensure all breeders entering the herd will have longer productive life.

Dr. Marcial Ramos Keynote Lecture:

The first ever keynote lecture to honor the first President of PCSP. This is presented in collaboration with Zoetis Philippines, Inc.

The Zoetis Story

Zoetis is a global animal health company dedicated to supporting veterinarians and animal producers and their businesses in ever better ways. Building on more than 60 years of experience, Zoetis is the world leader in the discover and delivery of quality veterinary vaccines and medicines, complemented by diagnostic products, genetic tests, biodevices and a range of services.

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Disease or Not a Disease: Neglected Infectious Infertility in Sows

Leonardo Ellerma, DVM
MSD Animal Health Phils.
leonardo.ellerma@merck.com

Key words: Infectious infertility, Disease, Erysipelas, Parvovirus, Leptospirosis

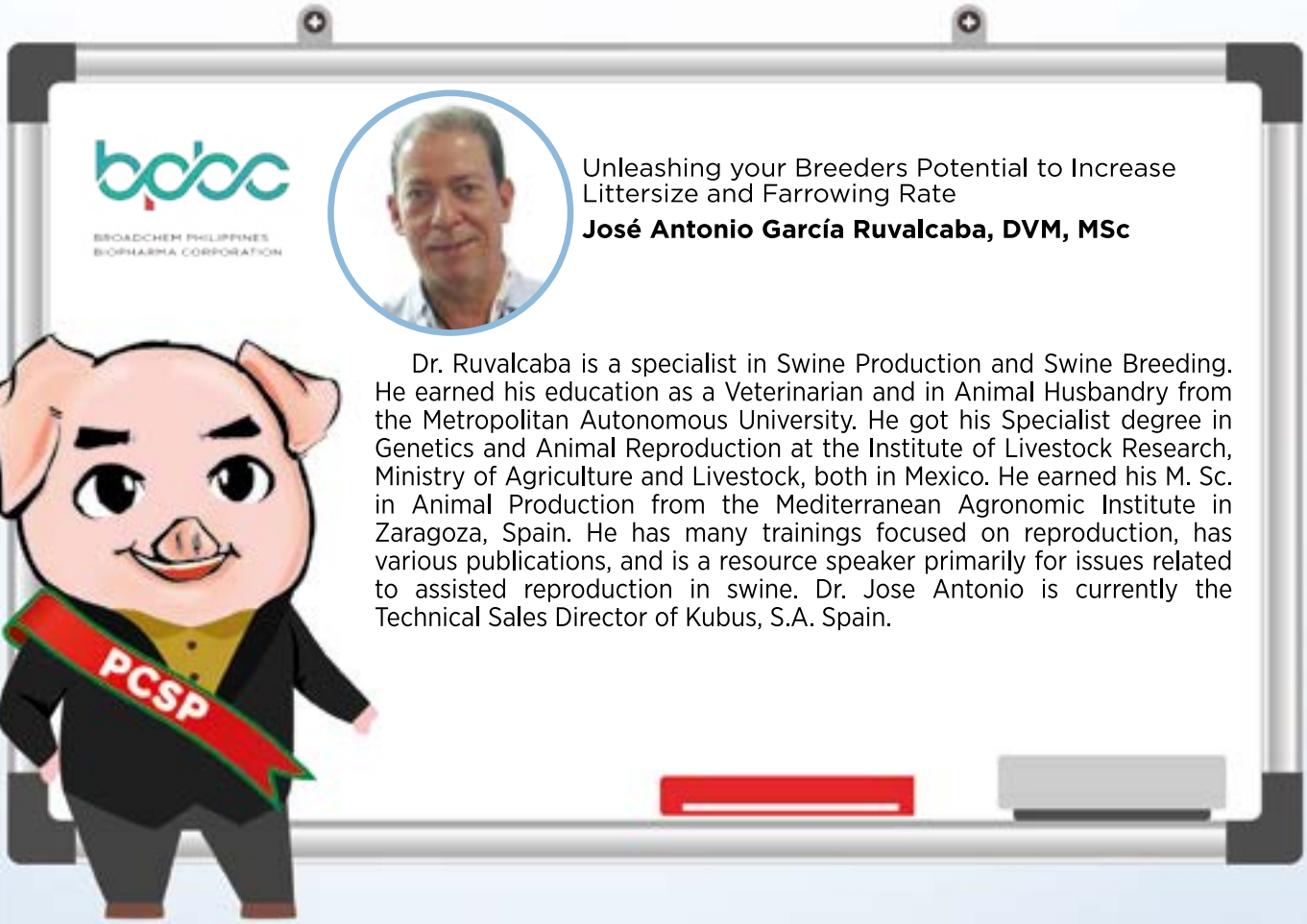
Infectious infertility in sow is one of the economic problems of swine farming but the causes are commonly neglected. Most associate the problem on summer infertility and quality of nutrients being fed to the pigs. Often, infectious causes are being taken for granted where in fact they play a big role for sows to become infertile just before they reach maturity or puberty. Erysipelas, Porcine parvovirus and Leptospirosis for instance are some of the swine pathogens that can cause infertility in boars and sows but most often neglected as these pathogens, with the exemption of Erysipelas, doesn't cause clinical illness to the pig itself but silently affecting their productivity and fertility.

Discussion

Erysipelas is an infectious disease mostly of growing or adult swine. It may not be clinically apparent but may cause acute illness involving many animals. It could also be a chronic disease characterized by enlarged joints, lameness and endocarditis. Rhomboid skin (diamond-skin) lesions are an inconsistent feature only associated with acute cases. It is a zoonotic disease that can infect humans. Clinical disease is usually sporadic and affects individuals or small groups, but sometimes larger outbreaks occur. Mortality is variable (0–100%), and death may occur up to 6 days after the first signs of illness. Acutely affected pregnant sows may abort, probably due to the fever, and lactating sows may show agalactia.[1] Porcine parvovirus (PPV) causes reproductive failure in pigs, characterized by embryonic and fetal death. Clinically, the disease in a herd manifests with decrease in litter size, return to service and increase in the number of mummified and/or stillborn piglets[2]. Pigs do not exhibit any clinical signs if infection is prior to the reproductive phase. Clinical outcome in sows or pregnant gilts depends on the time of the infection during gestation[3]. Leptospirosis is a contagious disease in swine and many other animals, as well as in humans, caused by infection with any one of a large group of Leptospira spp. serovars. Chronic infection in dams usually is apparent only as various forms of reproductive failure, including poor conception rates. Pregnant, infected animals often abort in late gestation. In many cases, fetuses are carried almost full term but may be mummified, dead or weak at birth. Although many infected neonatal pigs die within a few days, some often survive[4].

Summary

Infectious infertility in sows caused by Erysipelas, Porcine parvovirus and Leptospirosis are often neglected due to the belief that no clinical illness was being shown by the pathogens. However, when quantified, it poses a big loss in production and imposed a big drop in farm profitability. Economically, these pathogens directly affect NPD's, Litter Born, Stillbirths, Mummified, Farrowing rate and even Mortality rates. As such, defined control measures should be in place with these pathogens in mind.



Unleashing your Breeders Potential to Increase Litter Size and Farrowing Rate Through the Use of Synthetic Seminal Plasma (Predil MRA®).

José Antonio García Ruvalcaba, DVM, MSc
KUBUS, S.A. Technical Department
Europolis, Las Rozas (Madrid). SPAIN

Key words: A.I., P/W/S/Y, ovulation, farrowing rate, litter size, synthetic seminal plasma

Farm efficiency is measured by the number of piglets weaned per sow per year (P/W/S/Y) and this figure is determined by different factors where the artificial insemination (A.I.) and reproductive management play very important roles. In the female, there are several physiological events that go from potential ovulation to the fertilization process and that will determine the level of reproductive efficiency measured by farrowing rate (F.R.) and the litter size (L.S.)., so an understanding of these events is a must. To obtain a high reproductive efficiency the boar (semen) also plays a high influence. A successful A.I. program starts with a basic knowledge of the boar and sow reproductive functions and management.

An A.I. program requires paying attention to the following areas: In case of the boar: management, semen collection and semen assessment- processing. In case of the sow: management, estrus detection and insemination process. Finally, in case of the gilt: adaptation and breeding. Developments in AI technologies such as additives to semen that stimulate uterine contractions to reduce backflow and phagocytic ingestion of sperm cells may enhance the insemination process and can increase the reproductive performance through A.I. Pre- and post-breeding treatments with vasectomized boars, non - viable (dead) semen have proven to be efficient for increasing F.R. and L.S. However these techniques have their drawbacks and limitations so the use of a synthetic seminal plasma (Predil-MRA® Kubus) has been reported as enhancer of fertilization. Various studies and field results ratify these improvements. For example, studies in USA (Reicks Swine Vet Center, Minnesota, USA) show that the use of natural seminal plasma (Predil MRA®) improves both: farrowing rate (+5%) and litter size (+0.5) when used in the so called 2-phase insemination method in sows and gilts after 1st mating.

To optimise reproductive efficiency, it is necessary to understand all the A.I. process.

"Induction of Better Immunity Response Against PRRSv in Breeders through Different Routes of Administration for Effective Control of Reproductive Related Issues Caused by PRRSv"

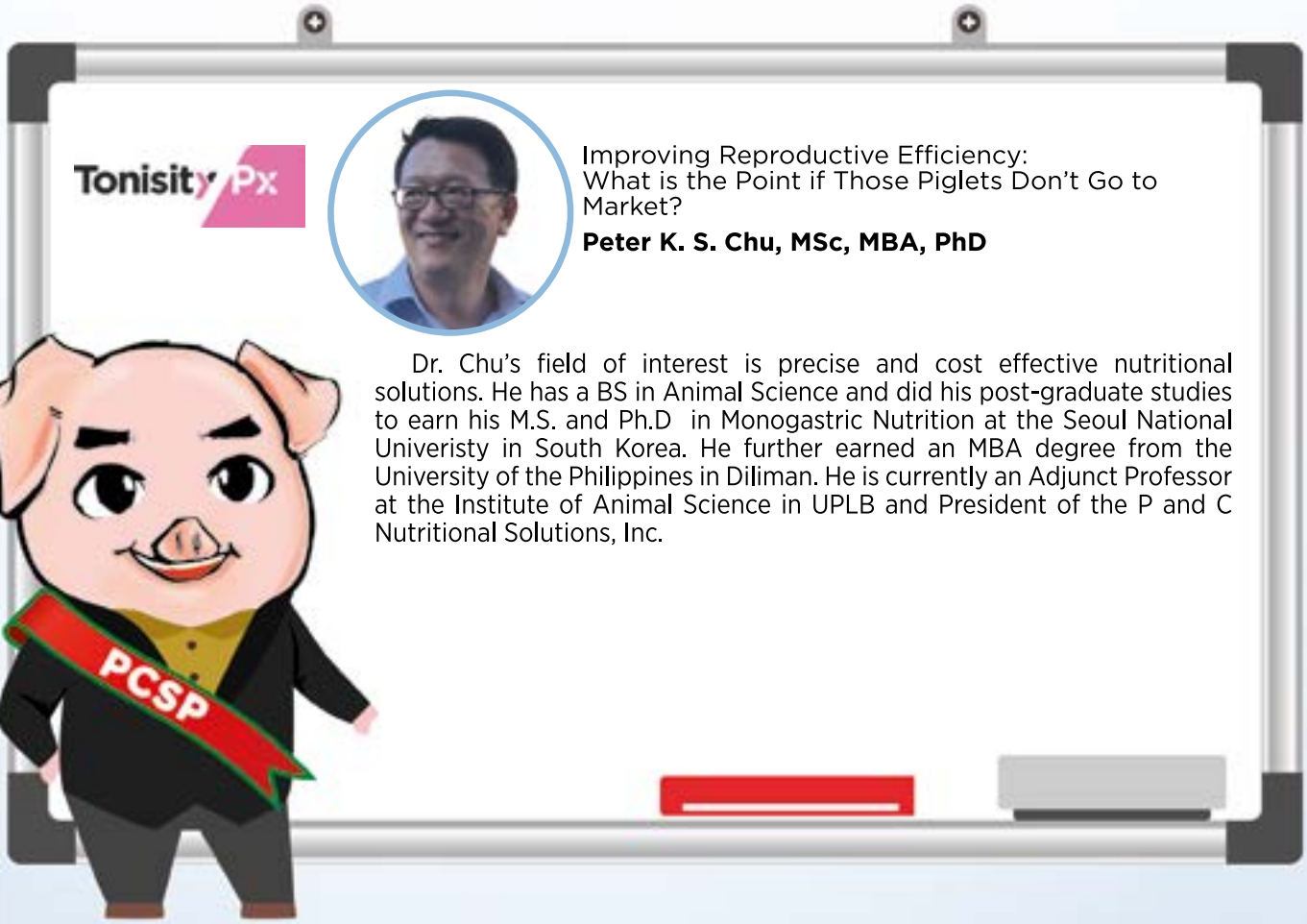
Introduction

Co-existence of PRRSV1 and PRRSV2 has been increasingly reported in several Asian countries, including China, Korea, Vietnam, Philippines and Thailand[1]. In the presence of co-infection with both PRRSV genotypes, clinical diseases are more severe compared to a single infection with either genotype. As PRRSv poses a big threat in reproduction performance of sows, getting the most efficient way to control and stabilize the breeder herd through advancements in vaccine administration is one of the avenues being evaluated for a more successful PRRSv control. The study was conducted to test the efficacy of UNISTRAIN® PRRS when administered intramuscularly or intradermally in pigs against a challenge with a PRRSV2 and a challenge with co-infection with PRRSV2 and PRRSV1.

Content

Following vaccination, ID vaccinated pigs had shorter viraemic phase and lower RNA level compared to IM vaccinated pigs. ID vaccinated pigs had significantly lower IL-10 level than IM vaccinated pigs (Figure1), but IFN-γ-PC were significantly higher (Figure2). There was no difference in antibody response. Following challenge, viraemic phase and lung lesion score at 7 days post challenge were significantly lower in ID vaccinated pig compared to IM vaccinated pigs.

The results of the study suggested UNISTRAIN® PRRS administered, either by ID or IM, can provide protection against challenge with HP-PRRSV, either alone or in conjunction with PRRSV1 as demonstrated by reduced lung lesion and viremia. ID route might represent an alternative to improve vaccine efficacy as it provided lower IL-10 and higher IFN-γ-PC and will lower vaccine process related reactions, like off feeding, local site vaccine lesions, systemic vaccine related reactions and abortions. With these results, improvement in reproductive performance of sows measured through mummified piglets, stillbirth and in general total litter size born alive or any PRRSv related fetal losses will greatly improve.



Improving Reproductive Efficiency: What is the Point if Those Piglets Don't Go to Market?

Peter K. S. Chu, Ph.D, MBA,
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President, P and C Nutritional Solutions Inc.
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Key words: gut health, PWM (pre-weaning mortality), prolific sows

Modern sows farrow more pigs per litter. But this genetically driven upsurge has drawbacks as well as benefits. Bigger litters carry a greater risk of lower birth weights and reduced uniformity. A primary challenge for every herd manager, therefore, is how to keep as many piglets as possible alive up to weaning and beyond, so that the gain from a larger litter at farrowing is not reduced by a higher pre-weaning mortality rate.

A new way of boosting the survival of all piglets is now available. It comes from offering a pleasant tasting isotonic protein drink to the pigs from an early age. The drink is made from a protein-rich proprietary powder, Tonisity Px, mixed with clean water.

Isotonic liquids are a new development in pig nutrition, but evidence suggests they are likely to play a fundamental role in future feeding strategies.

Lygene Harmony C. Culimay
PCSP-Pork Champ
Best Student Research 2019

Dr. Lygene Harmony C. Culimay is a newly licensed veterinarian, graduating with Doctor of Veterinary Medicine from the Central Luzon State University. Her work in her undergraduate thesis was chosen to become the first recipient of the Best Student Research on Swine Health. Her work was also awarded the Thesis Distinction Award from the Department of Pathobiology, given by the College of Veterinary Science and Medicine, CLSU.

Dr. Culimay also received her BS in Animal Husbandry last 2017. She is a consistent honor student having graduated Valedictorian in 2013 from the Sta. Maria National High School and as Salutatorian in 2009 from the Alfonso Lista Central School in her hometown of Sta Maria, Alfonso Lista, Ifugao.

Her thesis adviser is Dr. Clarissa Yvonne J. Domingo and who is also a Diplomate of the PCSP. Her work is endorsed by the CVSM Dean, Dr Virginia M. Venturina who hopes that the learnings from her student research be acceptable and eventually be applied in the mainstream of PRRSV testing for the benefit of the swine industry.

DETECTION OF PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME VIRUS IN SELECTED ABATTOIRS OF BULACAN AND PAMPANGA USING DRY RT-LAMP ASSAY

Lygene Harmony C. Culimay and Clarissa Yvonne J. Domingo
CLSU College of Veterinary Science & Medicine, email:lygeneharmonyculimay@gmail.com

Infections caused by Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) can cause severe economic impact on pig production with diagnosis being difficult as many animals do not show clinical signs. Although virus isolation provides definitive diagnosis, serological tests such as Enzyme-linked Immunosorbent Assay (ELISA) that detects serum antibodies remains to be the most widely used diagnostic tool. Unfortunately, serology only reveals previous exposure but not the actual presence of the virus. Molecular techniques like reverse-transcription PCR have been developed for the laboratory confirmation of PRRSV infection but is costly since this requires advanced and expensive equipment like a thermal cycler (Parida et.al., 2008). Reverse-transcriptase loop-mediated isothermal amplification (RT-LAMP) assay is highly sensitive and efficient for early detection and identification of microbial diseases. In 2015, the OIE recommended RT-LAMP as an alternative technique to RT-PCR. However, the original wet format has only 3 months shelf-life and needs to be stored at (-)15°C at any given time. With these, the study validated the optimized dry format RT-LAMP for PRRSV using pigs slaughtered in the abattoirs of Bulacan and Pampanga and determined the PRRSV positivity rate by samples collected from slaughtered animals.

A total of 33 slaughtered pigs from two big abattoirs in Pampanga and Bulacan with unknown vaccination and infection status were enrolled in the study. Approximately 3 ml of whole blood and 1 X 1 square inch thick of excised tissue samples (lung, tonsils, spleen) were collected from each animal. All samples were extracted for RNA and immediately processed using the dry format RT-LAMP protocol with hydroxy naphthol blue (HNB) as the colori-fluorometric indicator (CFI) for visible detection. Positive result yields a bright blue hue while colors ranging from dark blue, dark violet and lilac as negative. The nsp2 target gene was amplified at 63°C for 30 minutes. Positivity rate by sample was computed by: (#positive samples / total samples examined) x 100.

Results show a positivity rate of 45.45% (15/33) among the tested pigs with 13 from commercial farms and 2 from small hold farms. Positive samples came from lungs (33%, 11/33), spleen (15 %, 5/33) and tonsils (15%, 5/33). Only 1 blood sample (3%, 1/33) was positive. Results corroborated previous studies which reported PRRSV replicating in macrophages of the lymphoid tissues and lungs and persisting in lung macrophages during the acute phase. On the other hand, only 1 blood sample was detected for PRRSV. Several authors explained that PRRS virus is present in the blood only at 12-24 hours post infection with the highest titers at 7-14 days which lasts for no longer than 28 days (Dietze et al., 2011).

In conclusion, dry RT-LAMP is a novel, simple and a rapid nucleic acid-based test that can be used to detect PRRSV using blood and lymphoid tissues of pigs within 30 minutes at 63°C. Since the PRRS modified live vaccine virus can also be detected by any nucleic acid-based tests such as PCR & LAMP, it is recommended that the dry RT-LAMP be upgraded to enable differentiation of infected from vaccinated animals.

Acknowledgement: The author is grateful to the research assisted of her Thesis adviser who assisted her in the laboratory conduct and to the NMIS Region III officers and staff who allowed her and accompanied her during the sampling collection at the abattoirs of Bulacan and Pampanga.

BEST STUDENT RESEARCH ON SWINE HEALTH

The Philippine College of Swine Practitioners (PCSP) and its partner, Excellence are proud to announce the award for the Best Student Research on Swine Health. This is an annual search among the veterinary schools in the country. The award encourages veterinary students to engage and specialize in Swine Health and Medicine after graduation.

The award comes with a trophy and certificate. In addition, the recipient will be part of the technical presentations at the annual Pinoy Pork Challenge.

Interested students should submit a one-page abstract of a research paper, clinical case study, or literature review for consideration. The study or research paper should be done while working an undergraduate research work in college.

The submitting student must be a current junior or senior veterinary clinician student; or a recent graduate (current year) of Doctor of Veterinary Medicine from a PRC-accredited veterinary school at the time of submission.

Because all submissions must be done while doing recent undergraduate research projects thus, recent board passers with their undergraduate work qualify along with other undergrad students who have dedicated research work as undergraduate students. MS and PhD work are not part of this category.

Submissions are limited to one (1) abstract per student.

An unbiased, professional panel consisting of private practitioners and industry veterinarians – all members of PCSP, will review the abstracts.

Instructions for Submission of Abstracts

Abstract Content
Three categories of submissions will be accepted (Research, Clinical cases, Literature reviews). Submissions from all categories will be treated equally with respect to judging. The body of the abstract should include:

For Research Papers
- Statement of the problem
- Objective(s)
- Brief materials and methods (including statistical analysis)
- Significant results
- Discussion of how results can be applied by practitioners

For Clinical Cases
- Statement of the problem
- Describe the herd(s) and the time period
- Case history
- State what data was collected, what tests were used, etc
- Discuss the most significant findings and your recommendations
- Describe how your findings will assist the practicing veterinarian
- State what we can learn from this case or the methods used to work up this case
- Itemize the take home message(s) for the audience

For Literature Reviews
The literature review is meant to be a comprehensive review and a detailed summary of one specific topic.
- State the focus of the paper and include why you think this is an important and timely subject for swine veterinarians
- Discuss the most significant information gathered from the literature review. Describe how the findings will assist practicing veterinarians
- Itemize the take home message(s) for the audience

Abstract Submission

The rules for submission should be followed carefully. Abstracts will not be accepted after the due date. Abstracts that do not comply with the instructions will not be considered.

Each student may submit one abstract. Papers having multiple authors may be submitted and presented by only one of the student authors.

1. TITLE and ABSTRACT
Abstracts are limited to 550 words of text plus one visual aid (table OR figure). The visual aid (table OR figure) must be uploaded as a high-quality jpg or png file. It should be referenced within the text of the abstract. The table or figure title should be brief but self-explanatory; it should contain enough information to stand-alone but should not repeat information in the visual aid. Place the title above, not below, the table or figure. Do not include references in your abstract. There must be absolutely no identifiers (i.e., student name, school, state, country, diagnostic lab name, farm name, etc.) within the abstract, abstract title, or visual aid.

2. AUTHORS
The committee will require the name, email address, and affiliation for TWO (and only two) authors:

- **AUTHOR 1:** The veterinary student making the submission. The student author should be checked as both the corresponding and the presenting author. The student's veterinary college should be listed under "Affiliation."
- **AUTHOR 2:** The one mentor/co-author who will verify the student's participation in the project. The co-author must be a veterinarian, university faculty member, or PCSP member. The co-author's employing company, clinic, or university should be listed under "Affiliation."

3. STUDENT CONTACT INFORMATION
Supply current mailing address and phone number for the student presenter.

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Double prevention in a single shot for IM and ID administration

uniSTRAIN **Composition:** Each dose contains: Live attenuated Porcine reproductive and respiratory syndrome virus (PRRSV), strain VP-046 BIS $10^{4.5}$-$10^{6.5}$ $CCID_{50}$ (cell culture infectious dose). **Indications:** Breeding females. For active immunization of breeding females from farms PRRS virus to reduce reproductive disorders, incidence and duration of viraemia, transplacental virus transmission, virus tissue load and clinical signs associated with infection with strains of PRRS virus. Moreover, vaccination reduces the negative impact of PRRS virus infection on piglet performance (mortality and weight gain) within the first weeks of life. Pigs: For active immunization of pigs from farms affected with PRRS virus to reduce the incidence and duration of viraemia and virus tissue load. A significant improvement in mortality, daily weight gain and respiratory clinical signs are observed under field conditions. The onset of immunity is 4 weeks after vaccination and the duration of immunity is until the end of the fattening period. **Dosage and administration route:** Intramuscular or intradermal route using a suitable device. Dosage: Intramuscular use: 2 ml/animal. Intradermal use: 0.2 ml/animal. **Interaction with other medicinal products:** Safety and efficacy data are available which demonstrate that this vaccine can be mixed with HIPRA inactivated vaccine against Porcine Parvovirus and Erysipelas administered intramuscularly and also can be mixed with AUSKIPRA GN administered intramuscularly or intradermally. The product literature of ERYSENS PARVO and AUSKIPRA GN should be consulted before administration of the mixed products. No information is available on the safety and efficacy of this vaccine when used with any other veterinary medical product except the products mentioned above. A decision to use this vaccine before or after any other veterinary medicinal product therefore needs to be made on a case by case basis. **Special Precautions:** Vaccinate healthy animals only. Vaccinated females may excrete the vaccine strain for up to nine days following vaccination by nasal secretions. In some cases, faecal excretion can also occur. The vaccine strain can spread to non-vaccinated cohabitant animals, including the fetus during pregnancy and piglets after partum without any clinical consequence. If necessary, special precautions should be taken to avoid the transfer of the virus within the herd or spreading to susceptible animals. Newly introduced PRRSV-naive females (e.g. replacement females from PRRSV-negative herds) should be vaccinated prior to mating. **Packaging: IM:** 10, 25, 50, 100 and 125 doses. **ID:** 50, 100 and 125 doses **Marketing Authorisation Holder:** LABORATORIOS HIPRA, S.A. **Local representative:** Hipra Philippines, Inc. **Marketing Authorization number:** VSFR No. R-2125.

AUSKIPRA® GN Live vaccine, against Aujeszky´s Disease gE negative strain. **Composition:** Aujeszky´s Disease virus, strain gE negative Bartha K61 $10^{6.5}$ $TCID_{50}$. **Indication:** Swine: to prevent Aujeszky´s Disease. **Dosage and administration route:** Intramuscular or intranasal. Fattening pigs: One dose by intramuscular route, at approximately 12-13 weeks old, i.e. when passive maternal immunity has decreased to very low levels. In endemic areas, it is recommended to vaccinate at 10-11 weeks of age and revaccinate at 13-14 weeks of age. Sows and boars: Two vaccinations at 3 to 4 week intervals in future breeders when entering the premises or in breeders which have not been previously vaccinated. Thereafter, revaccinate every 4 months, or at 4 to 6 weeks before each farrowing. In case of an Aujeszky's disease outbreak, it is recommended to vaccinate the entire herd (sows, boars and piglets) with one dose. **Packaging:** Vials of 50 and 100 doses. **Marketing Authorization Holder:** LABORATORIOS HIPRA, S.A. **Local representative:** Hipra Philippines, Inc. **Marketing Authorization number:** VPSR No. R-823.

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Boar Problems and Swine Infertility

John Carr, PhD, DPM, DipECPHM, MRCVS

Dr. Carr specializes in Swine Production and Swine Health. He earned his Bachelor in Veterinary Science and his Ph.D. from the University of Liverpool, UK. He got his Certificate and Diploma in Pig Medicine from the Royal Veterinary College, UK. He is also a Diplomate of the European College of Porcine Health Management. Dr. Carr has an active consultancy in several countries, including the Philippines, where he is assisting Red Dragon Farm.

Swine Reproductive Efficiencies: Boar Problems and Sow Infertility

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Key words: reproduction, boar, sow

The production cycle starts with gilt management and fertile boars.

There should be a fixed aim of breeding. Has the farm got a batching program that will allow for an all-in/all-out stabilized production within a 5% variance batch on batch? On many farms, production is chaotic resulting in over 40% variance batch on batch. This leads to over- and under-stocking resulting in failure to reach expected output targets. It will become increasingly important to meet our production targets. We must reduce variations in pig production.

There are two major components to achieving efficient reproduction – the male (Boar) on one side and the female (Sow) on the other. The component that causes most of the problems however, is ourselves.

With the boar, the major factors affecting boar infertility are associated with heat stress and semen handling and storage. The quality of the boar needs to be improved with a major review of leg and foot structure. Farms need to adopt methods passing on the best boar genetics to maximize the efficiency of the best boars, utilizing post-cervical insemination and single serving techniques for example.

With the female side, the gilts need to cycle. Controlling gilts cycling starts with good selection and proper feeding routines. Provide the gilt with an excellent environment with respect to expected growth curves.

A major health issue of gilts is associated with respiratory heath, Porcine Reproductive and Respiratory syndrome (PRRS), Mycoplasma hyopneumoniaeand Swine Influenza. It is vital to stabilize the gilt and sow's health to reduce variation in reproduction.

Swine Industry Roadmap:
Initiating Stakeholder Engagement

Ruth Miclat-Sonaco, DVM, MPM, FPCSP

Dr. Miclat-Sonaco is a graduate of Bachelor of Science in Animal Husbandry and a Doctor of Veterinary Science and Medicine from the Central Luzon State University, Nueva Ecija. She earned her Master in Public Management from the Rural and Agricultural Development School of Government at the Ateneo de Manila University. Currently, Dr. Miclat-Sonaco is the Center Director of the International Training Center on Pig Husbandry (ITCPH). She has the following trainings: a Diploma in Pig Husbandry from Praktijskool Barneveld, The Netherlands; the Sabbatical Course on Swine Production Medicine, at Purdue Universsity; and a Sero-Epidemiological Course from the University of Berlin.

Dr. Ruth is a also a Fellow of the Philippine College of Swine Practitioners.

Swine Industry Roadmap

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Key words: roadmap, targets, key result areas

The Philippines is one of the important markets for pork, and demand for meat is positively affected by population and income (Ompoy and Prantilla, 2013). According to the Worldometers estimation, the population of the Philippines reached around 100 M in 2015, and it is increasing at a rate of 2% yearly. About 22M of hogs are needed to satisfy our estimated 1.5M kgs. pork consumption. Hog requirement was calculated to be around 25M and 29.2M heads for 2022 and 2027, respectively.

It is the target of the Philippine hog industry to improve the productivity of hogs and they identified seven (7) technical parameters to enhance in the coming years: pigs sold/sow/year (heads), feed conversion ratio (kg), average daily gain (g), mortality (%), sow index, sow feed/sow/year (kg) and the pig meat/sow/year (kg). Below are the technical targets of the hog industry for 2017-2022 period and the 2023-2027 period.

Philippine National Standards (PNS) on Code of Good Animal Husbandry Practices (GAHP) for Swine

Georlene P. Orbista, BSA

Ms. Orbista is a Bachelor of Agriculture graduate of the University of the Philippines at Los Banos, Laguna. Her major field of interest is in Animal Science. Her relevant experiences include being a Research Assistant for UNAHCO, then joining BSFII Technologies, Inc. as Quality Control Analyst for Microbiology and as Science Research Specialist I for the Bureau of Agriculture and Fisheries Standards. Currently she is a Project Assistant IV at BAFS, in the Department of Agriculture and she is a resource person for the cascade seminars for the GAHP Roadshow and Food Safety Related Standards for Swine Raisers.

Philippine National Standards (PNS) on Code of Good Animal Husbandry Practices (GAHP) for Swine

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Food safety is one of the emerging issues today. Based on the 2015 World Health Organization (WHO) report, more than 200 diseases ranging from diarrhea to cancer is caused by consumption of unsafe food containing harmful bacteria, viruses, parasites or chemical substances. Globally, food safety has also become a health priority as it is inextricably linked to national productivity and development. Food-borne diseases can hamper socio-economic development by draining health care systems, and harming national economies, tourism and trade.

These increasing health related concerns lead to the inclusion of food safety in the priorities needed to be addressed worldwide. In the Philippines, Republic Act No. 10611 or the Food Safety Act of 2013 was enacted to strengthen the food safety regulatory system in the country and to facilitate the market access of local foods and food products.

In support of the implementation of FSA of 2013, the Bureau of Agriculture and Fisheries Standards (BAFS) embarked on facilitating the drafting of the Philippine National Standards (PNS). The developed standards include grading and classifications, codes of hygienic practices, and guidelines for agriculture and fishery products including agri-fishery machineries, tools and equipment.

One of the developed standards is the PNS Code of Good Animal Husbandry Practices (GAHP) for Swine. The main objective of this code is to ensure that the farms' farming practices shall provide consumers with products that are safe and fit for distribution and/or human consumption. It shall also ensure safety and comfort to farm workers and animals without any degradation to the environment.

Biosecurity in the Backyard Segment:
How Do We Level Up?

Giovani Sevilla, DVM, MBA, DipPCSP

Dr. Sevilla hails from Nasugbu, Batangas and is a graduate of DVM from the University of the Philippines at Los Banos. He is a Vet Med Board Exam top-notcher of his batch. He earned his MBA from UP Diliman. Currently, Dr. Sevilla is the Head of Marketing and Technical of Elanco Philippines, Inc. He considers one of the highlights of his professional journey - was being part of the team behind the popular agricultural TV show "Payo Ni Doc" of which the purpose is to uplift the backyard farmer. After all, he was raised by backyard swine farmers and himself tried small-scale farming.

Dr. Giovanni or Gio is a Diplomate of the Philippine College of Swine Practitioners.

Biosecurity in the Backyard Segment: How do we level up?

The backyard swine segment constitutes around 65% of the roughly 13 million pigs (PSA, Swine Situation Report) in the Philippines. Despite the scale of its contribution to the national hog production, this segment is the most vulnerable. The financial risk for the producer can be very high as there is limited support from government and professionals for technical inputs and services.

Furthermore, the emergence of diseases such as Porcine Epidemic Diarrhea (PED), Classical Swine Fever (Hog Cholera), Highly Pathogenic PRRS (HP PRRS) and the more recent reported outbreaks of African Swine Fever (ASF) in some Asian countries highlighted the devastating economic effect of these diseases in the small-scale operation and the significant role this segment plays in the disease transmission and endemicity.

The primary suspect for the vulnerability of this segment is the low level of biosecurity measures in place. Thus, this presentation will review some of the backyard operation's biosecurity risk factors as identified in several studies and field observations. Moreover, the speaker will attempt to describe some practical biosecurity approaches in reducing the risk of disease transmission; from segregation, cleaning and disinfection, physical protections measures, fly and pest control, to management measures.

Reviewing Downtime Requirements
Angel Manabat, DVM, FPCSP

Dr. Manabat received his DVM degree from the University of the Philippines. He has been involved with the swine industry for more than 30 years. He started his career in swine as a Training Specialist at ITCPH. He then joined Monterey Foods Corporation – San Miguel Foods Corporation, where he headed the breeding operations department. He joined Novartis Animal Health Philippines as Technical and Marketing Manager. Currently, he is the Technical Services Manager for PIC Asia. Dr. Angel is a recipient of several industry awards and is a Fellow and External Vice-President of the Philippine College of Swine Practitioners.

Reviewing Downtime Requirements
Angel Antonio C. Manabat, DVM, FPCSP
Technical Services Manager PIC Philippines Inc.

Biosecurity, as have been said in many recent discussions, have been rightfully pushed into the forefront after the reports of possible African Swine Fever (ASF) cases in the Philippines came out. One part of biosecurity is downtime, downtime of people, downtime of transport etc. The main purpose of downtime is to lessen the chances of bringing unwanted pathogens from infected premises people or transport have visited into farm operations. Over the years there have been many definitions and lengths of downtime, and possibly because of these we more often we would see different implementation in farms. Long downtime periods may have been influenced by studies with a study in 1970 by Sellers et. al. titled "Inhalation, persistence and dispersal of foot and mouth disease virus by man," which in its summary states that Sampling of human subjects, who had been in contact with animals infected with Foot and Mouth Disease (FMD) virus, showed that virus could be recovered from the nose, throat, saliva and from air expelled during coughing, sneezing, talking and breathing. The study found that the virus can still be found in the nose of 1 subject for 28 hours. Based on this, without getting specifics on how the virus was found or if the virus was infective, many regulatory bodies recommended 5-7 days away from FMD infected premises before allowing anyone coming into farms with animals susceptible to FMD. However recent studies on FMD (Pacheco et. al. 2004) have shown that people exposed to the virus did not have FMD virus in nasal secretions and concluded that extended downtimes were not necessary to prevent transmission of FMD. What they found to be only needed to prevent transfer of infection was "handwashing and showering and donning of clean outerwear."

In similar studies conducted by Pitkin et.al. on Porcine Reproductive and Respiratory Syndrome (PRRS) virus and Mycoplasma hyopneumoniae (Mhp) in 2010, they had similar findings that "a one night downtime was determined to be enough to prevent spread of PRRS and Mhp if people are asked to change clothing, footwear and take a shower."

With these studies clearly downtimes should not be based solely on time but on mainly following proper decontamination procedures.

Government Updates on Border Control and Protection Programs against ASFv

Ronnie Domingo, DVM, MSc

Dr. Domingo is the current OIC Director of the Bureau of Animal Industry. He hold a Certificate in Animal Production from the Central Luzon State Univeristy and is a DVM from the University of the Philippines. He earned his Master of Science in Tropical Veterinary Medicine from the University of Edinburgh, UK and his Master in Christian Leadership from the Asian Center of Leadership Education. Dr. Domingo's main interest is Veterinary Epidemiology and has led projects to promote One Health, serves as consultant to the ACIAR-PCAARRD and is a Technical Editor of the Philippine Journal of Veterinary Medicine. Dr. Ronnie represents the Philippines and its animal industries in the OIE and is a sought-after resource speaker for veterinary conventions.

"Government Updates on Border Control and Protection Programs Against ASFv"

Ronnie D. Domingo, DVM, MSc
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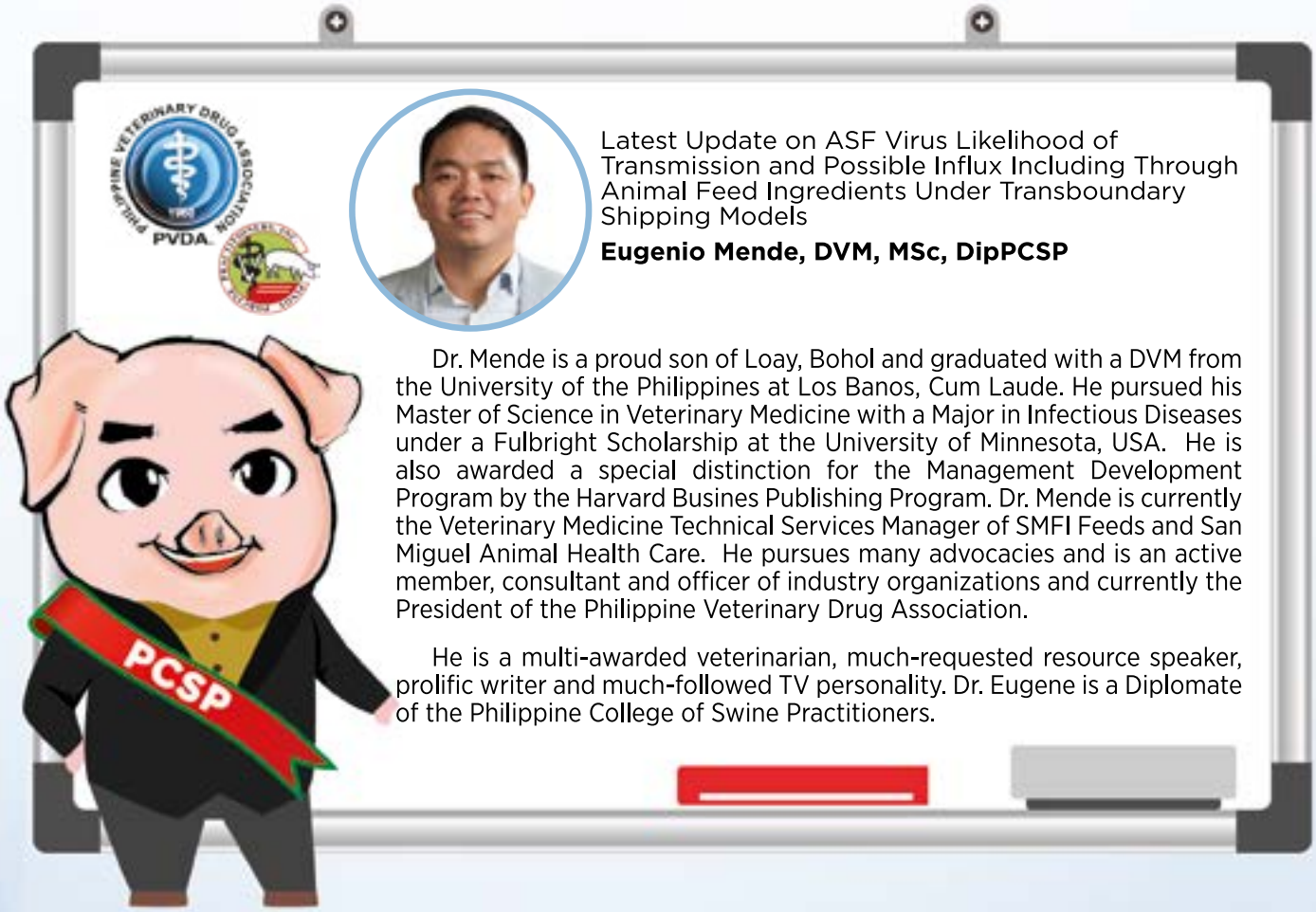
The continuing outbreaks of African Swine Fever (ASF) in multiple countries across Africa, Asia and Europe is a serious threat to the local industry. ASF which is a severe viral disease affecting domestic and wild pigs, has no treatment nor vaccine developed for prevention. The disease is highly transmissible with 100% mortality rate among infected pigs. The virus has high survivability in meat and meat products, contaminated feed, vehicles and other farm equipment and serve as important means for transmission and disease spread.

In Asia, the ASF outbreaks in China which started on August 2018 advanced to neighboring ASEAN Member countries such as Mongolia, Vietnam, North Korea, Cambodia, Hong Kong and Lao PDR. While the disease has no public health implications, the economic and productivity losses have greatly devastated many swine raisers globally. As of latest FAO August report, around 4.8 million pigs have already been culled in Asia due to this deadly swine disease.

To protect the Php 260 billion swine industry, the Department of Agriculture (DA) issued different memoranda banning the import of livestock, meat and meat by-products from ASF infected countries and prohibiting the practice of swill feeding sourced from international aircrafts/vessels. The National Veterinary Quarantine Services (NVQS), of the Bureau of Animal Industry (BAI) also implements stricter quarantine inspection measures and procedures in major seaports and airports to prevent the entry of pork and its by-products.

The BAI has also conducted different stakeholders meetings and consultations to raise awareness and gather insights to improve border control strategies on ASF. Inter-agency collaboration has also been forged with Department of Health, Department of Transportation, Department of Finance and Department of Interior and Local Government among others. A contingency plan has also been developed to ensure that protocols and resources are at place in the event of disease incursion.



Latest Update on ASF Virus Likelihood of Transmission and Possible Influx Including Through Animal Feed Ingredients Under Transboundary Shipping Models

Eugenio Mende, DVM, MSc, DipPCSP

Dr. Mende is a proud son of Loay, Bohol and graduated with a DVM from the University of the Philippines at Los Banos, Cum Laude. He pursued his Master of Science in Veterinary Medicine with a Major in Infectious Diseases under a Fulbright Scholarship at the University of Minnesota, USA. He is also awarded a special distinction for the Management Development Program by the Harvard Busines Publishing Program. Dr. Mende is currently the Veterinary Medicine Technical Services Manager of SMFI Feeds and San Miguel Animal Health Care. He pursues many advocacies and is an active member, consultant and officer of industry organizations and currently the President of the Philippine Veterinary Drug Association.

He is a multi-awarded veterinarian, much-requested resource speaker, prolific writer and much-followed TV personality. Dr. Eugene is a Diplomate of the Philippine College of Swine Practitioners.

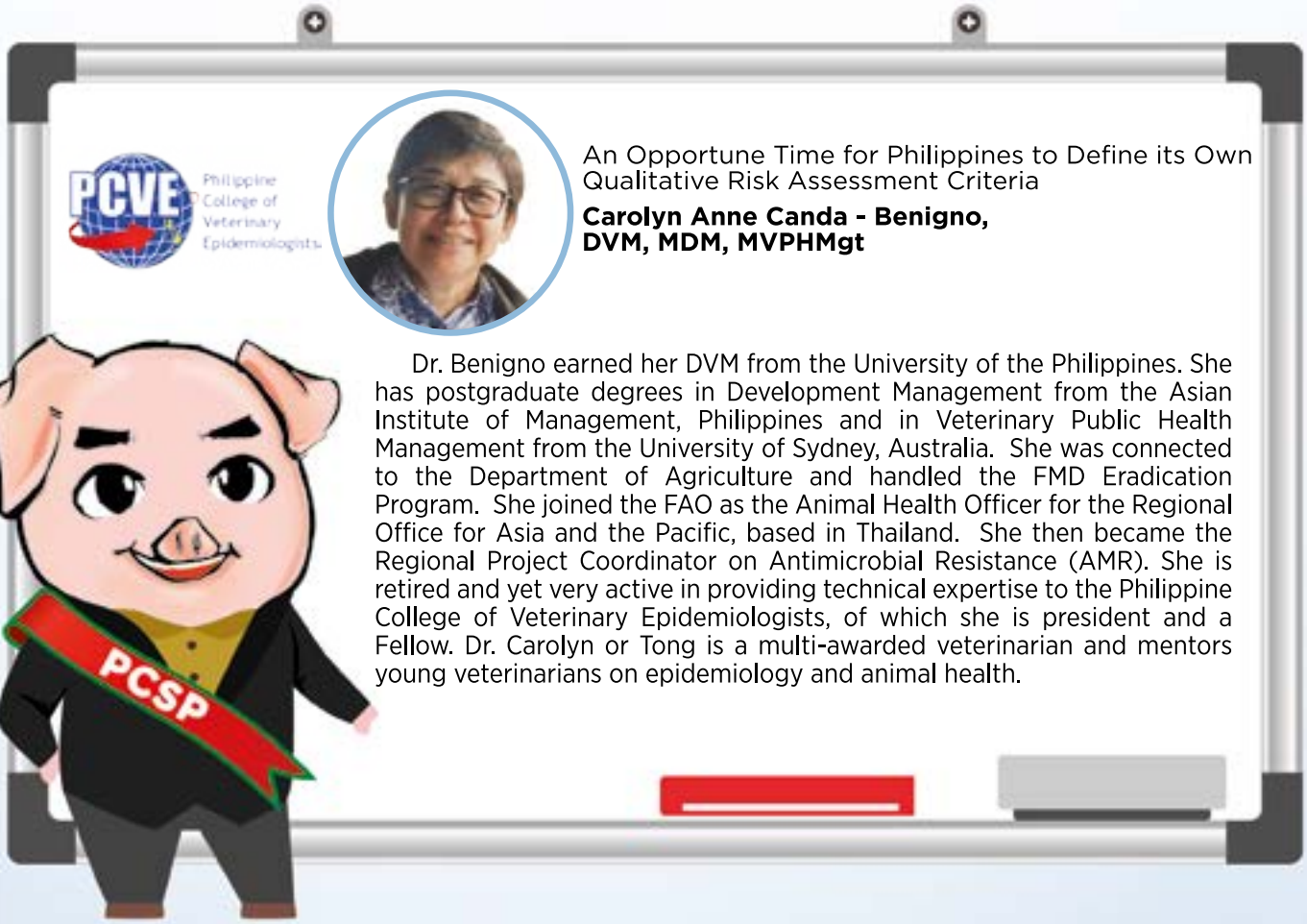
Latest Update on ASF Virus Likelihood of Transmission and Possible Influx Including Through Animal Feed Ingredients Under Transboundary Shipping Models
Dr. Eugenio P. Mende

As influx-protection of pig and porcine by-products from ports and airports have already been fairly well covered, there are two other documented risks where the virus can have opportunities to enter Philippine shores – through contamination of imported feed materials like grains from ASFV-infected European countries and through reported Chinese and Vietnamese fishermen illegally bartering pork products with their local counterparts in our West Philippines Sea shorelines. This presentation will report the output we gathered as members of the Technical Working Group (TWG) on the Guidelines and Requirements for Imported Feed Ingredients from ASFV-confirmed infected countries. This will assure the industry that the committee and the panel members of the TWG composed of government regulators from BAI, key industry players, importers and swine practitioner-members from the Philippine College of Swine Practitioners (PCSP) researched intensively on the survivability and decay studies of ASFV in feeds raw materials and agreed on a set of requirements and guidelines that do not only ensure no contamination into our farms but are also doable in our importing process.

The other possible entry of ASFV that needed to be covered though is its influx through illegal fishermen from confirmed ASFV-infected countries like China and Vietnam. Representative from the Philippine Coast Guard (PCG) confirmed that indeed Chinese and Vietnamese fishermen frequent the West Philippine Sea doing barter trade with our local fishermen. Reportedly, pork by-products like pork canned goods and dumplings are part of their barter products in exchange for cigarettes, among others. Pork and pork by-products are potent sources of ASFV because the virus can live for up to 1,000 days in frozen pork, up to 300 days in dried pork meat and even up to 182 days in salted pork. PCG assured though that they would look into the West Philippine Sea shorelines and ensure a more intensive coastal border control program.

Meanwhile, AFSV continues to spread across the Asian countries confirmed to have been infected, amidst strict movement control and depopulation programs. In Vietnam, since their Ministry of Agriculture and Rural Development (MARD) confirmed its ASV outbreak on February 19, 2019, a total of 366 outbreaks have already been reported in 20 provinces with more than 46,600 already culled. In Mongolia, since its first report on January 15, 2019, 11 outbreaks in 6 provinces have been reported. More than 2,992 pigs or around 10% of their total pig population have already been destroyed due to ASF outbreaks. And in China, since the China Ministry of Agriculture and Rural Affairs (MARA) confirmed its first ASF outbreak in Liaoning Province on August 3, 2018, 114 ASF outbreaks have already been reported in 28 Provinces, with more than 950,000 pigs already culled in an effort to halt further spread.

There is really no other way but to stomp out possible sources of the influx of the virus and ensure that it does not enter the country. And this presentation will be an enriching information in further alerting stakeholders, informing government of its severity to cause action and support and seek cooperation with the inter-agencies for an organized and unified action against the threats of this African Swine Fever Virus.



An Opportune Time for Philippines to Define its Own Qualitative Risk Assessment Criteria

Carolyn Benigno, PCVE
carolynbenigno@gmail.com

Much of the applications of risk analysis on animal health has been in the area of import risk analysis (IRA). The World Organization on Animal Health (OIE) framework outlines the steps for an IRA, namely: hazard identification, risk communication, risk assessment and risk management. These IRA methods are often trade based but there are other uses of risk analysis which follow the same framework. Specific examples of RA uses are in the areas of food safety and specific applications on animal health like issues on movement, vaccination decisions or even stamping out decisions, to name a few.

Risk assessment is one of the steps under the risk analysis framework. It is in fact the most critical step as it involves release assessment, exposure assessment and consequence assessment. All these sub-steps require a throrough risk estimation.

Dufour et al has stated that owing to the lack of relevant data and the very short period of time usually allowed to assess animal health risks on particular topics, a qualitative risk method is usually used. What is important is that the RA team tasked to work on a particular issue, understands the factors that contribute to risk and are able to define the risk pathways of these factors.

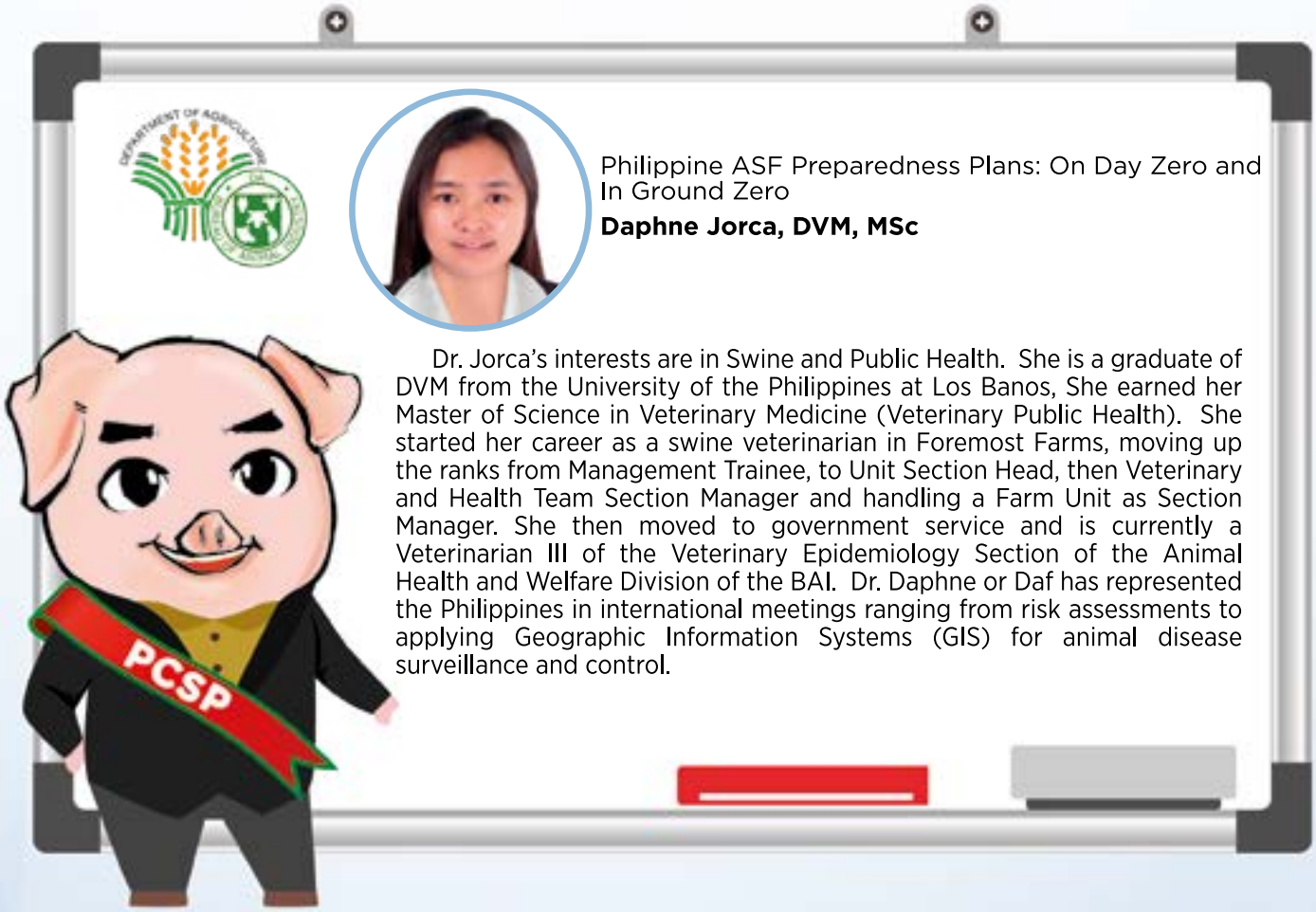
At present, the Philippines uses the Dufour criteria in estimating risks for lack of its own specific set of criteria. Countries that are usually heavy into trade have set their own criteria for assessment. Countries like New Zealand and Australia have their respective set of criteria, defining how they arrived at negligible, low, moderate or high risk. Japan also uses its own criteria especially when doing antimicrobial surveillance. FAO has its own set of risk criteria too. For countries just starting with policies based on risk, they can use what the other countries are using or cite literature defining set criteria. The important thing is to define the risk assessment criteria from the outset and reference it.

As the Philippines shifts to risk based policies with regards to trade, the veterinary services must be equipped to provide explanations on the risk criteria used. Discussions have commenced on establishing its own set of risk assessment criteria during a risk analysis training on African Swine Fever (ASF) issues.

As more capacity building activities on risk analysis are implemented and emerging issues are used as bases to conduct risk analysis studies, the time is right to develop its own set of risk assessment criteria.

Resulting discussions from these activities are expected to produce a more conclusive set of the risk assessment criteria so that trading partners recognize and comply with what the Philippines has set out to do

The paper attempts to present the preliminary work done on risk estimation criteria and how it was applied to ASF issues.



Philippine ASF Preparedness Plans: On Day Zero and In Ground Zero

Daphne Jorca, DVM, MSc

Dr. Jorca's interests are in Swine and Public Health. She is a graduate of DVM from the University of the Philippines at Los Banos, She earned her Master of Science in Veterinary Medicine (Veterinary Public Health). She started her career as a swine veterinarian in Foremost Farms, moving up the ranks from Management Trainee, to Unit Section Head, then Veterinary and Health Team Section Manager and handling a Farm Unit as Section Manager. She then moved to government service and is currently a Veterinarian III of the Veterinary Epidemiology Section of the Animal Health and Welfare Division of the BAI. Dr. Daphne or Daf has represented the Philippines in international meetings ranging from risk assessments to applying Geographic Information Systems (GIS) for animal disease surveillance and control.

ASF Contingency Plans Final Edition: Philippine Preparedness Plans on Day Zero and in Ground Zero

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Key words: preparedness plan, disease emergencies

African swine fever (ASF) is a devastating swine disease and a major disease concern of swine industry globally. It affected countries in Africa, Europe and now spreading in Asia, leading to the culling of more than 4.8 million pigs to date. The Philippines, being one of the largest pork producers, has an estimated 12 million pig population amounting to 263 billion worth industry. With this, the government and the swine industry stakeholders are working together to implement preventive measures and protect the industry. A Contingency plan was developed to provide a systematic way to achieve the level of preparedness and combat animal disease emergencies specific for ASF. The plan specifies the industry's actions such as prevention, detection, response and recovery when faced with ASF situation. Currently, preparedness plans are now being executed to capacitate all the responders and front liners in case of disease emergencies. The threat is now at the doorstep of the Philippine hog industry. Collaboration, communication and coordination with all the stakeholders and partners are the key steps to prevent the entry and spread of ASF.

PCSP Activities
January to June 2019

Pinoy Pork Challenge Roadshow

The Philippine swine industry is the second biggest sector of agriculture and the PCSP continues its efforts to support it with the Pinoy Pork Challenge Roadshow. The first leg was held at Aklan last February 18, 2019. The recurring theme for this event is "Updates on the prevention and control of swine respiratory diseases". Swine enthusiasts across all fields from students, professors, public and private veterinarians attended the event to listen to experts. It was made part of the Pre-Congress Events of the subsequently held PVMA Convention in Iloilo City.

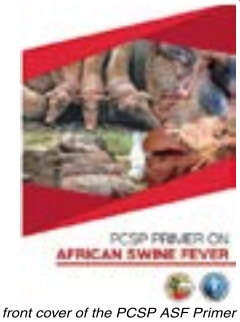
The Pinoy Pork Challenge is an annual event organized by the Philippine College of Swine Practitioners (PCSP). The roadshow was launched to help enrich our swine raisers and practitioners with up-to-date knowledge to help the swine industry thrive.

PCSP members in yellow / black uniforms pose with colleagues.

PCSP and PVDA partner to release an ASF Primer

The ASF Primer is a product of the partnership between the Philippine College of Swine Practitioners (PCSP) and the Philippine Veterinary Drug Association (PVDA) through the leadership of their presidents - Dr. Zoilo Lapus and Dr. Eugene Mende.

Collaboration with the Bureau of Animal Industry was done in the effort to provide the basic technical information about the disease to ensure that all swine stakeholders become aware and help in the efforts of the prevent its entry.



The front cover of the PCSP ASF Primer

The ASF Primer launch was done last April 4, 2019, during the opening of the 28th National Hog Convention at SMX Convention Center, Pasay City.

PCSP members in pink uniforms pose with swine industry stakeholders to launch the ASF Primer.

PCSP joins NAST meeting for ASF Readiness

Dr. Angel Manabat, PCSP Fellow and External Vice-President

The PCSP is at the forefront of the campaign against African Swine Fever (ASF). Last June 10, 2019, they joined the Department of Science and Technology / National Academy of Science and Technology (DOST/NAST) in a technical forum to step up the information drive against ASF.

ASF is a disease which can wreck havoc in the Philippine swine industry as stated by one the academician, Dr. Ceferino Maala due to its economic impact. Thus, the need to keep the disease out of the country. PCSP members, Dr. Angel Manabat, Fellow and Dr. Clarissa Domingo, Diplomate were invited to discuss on Biosecurity measures and local diagnostic trends the Philippines, their role in preventing entry of ASF and how to detect them rapidly in the field.

The Bureau of Animal Industry (BAI) also shared the agency's strategy to prevent ASF entry into the Philippines through the BABES intiative: B, Ban entry of pork products from ASF positive countries; A, Avoid swill feeding; B, Block entry of at international ports; E, Educate our people; S, Submit samples. Dr. Romeo Sanchez gave updates about the development with regards to the disease, it was said that it was not as explosive as the available literatures describe. ASF serotype 2 is present in Asia and would probably be the one we should be worried about.

Dr. Clarissa Domingo, Diplomate PCSP

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PCSP @ the APVS 2019: Focus on the Filipino Veterinarian

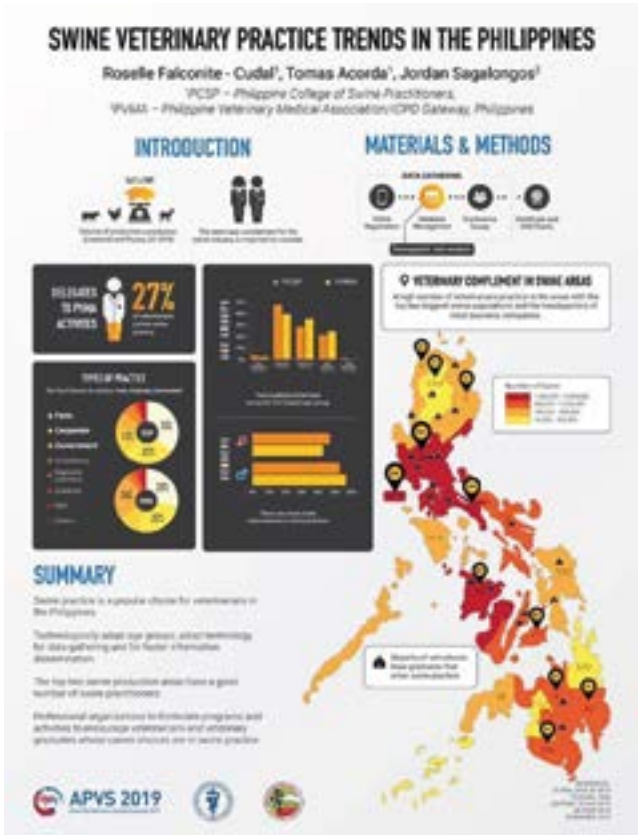
The Philippine College of Swine Practitioners (PCSP) represented the Philippine swine industry at the recently held Asian Pig Veterinary Society (APVS) in Seoul, South Korea. An active member since the start, Dr. Zoilo Lapus, President of the PCSP sits at the board of the APVS and ensures we get the latest updates on swine health issues.

(Picture – second from left – Dr. Zoilo Lapus, with the Board Members of the APVS Member Countries)

Dr. Tomas Acorda, Chair of the PCSP's Specialty Board gave the Country Report and highlighted on the efforts by both government and private institutions and veterinarians to address issues – especially the impending threat of ASF.

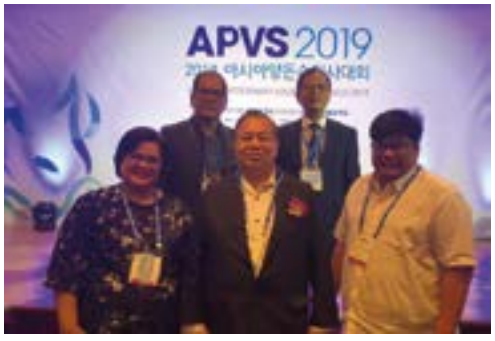
(Picture – center – Dr. Tomas Acorda and the Country Representatives)

Updates on ASF and the learnings we have gathered will be shared at the 23rd Pinoy Pork Challenge on October 2.



In addition, the PCSP submitted a Poster for the APVS entitled "Swine Veterinary Practice Trends in the Philippines". A joint effort of the PVMA and the PCSP – and an output from the automation of attendance systems through the partnership with ICPD.

We thank our Filipino Veterinarians who are pursuing swine practice and helping in the efforts to elevate our swine industry.
Please check out our website www.pcsp.org.ph for more information.



(Picture - Standing at back, L-R, Dr. Renato Policarpio, Dr. Tomas Acorda. Standing in front, L-R, Dr. Roselle Falconite-Cudal, Dr. Zoilo Lapus and Dr. Amiel Jun Santiago)

African Swine Fever Forum
Sharing what we learned at the APVS 2019

Dr. Zoilo M. Lapus

The Asian Pig Veterinary Congress 2019 was held in Seoul, South Korea last August 25-28, 2019. 39 Filipino veterinarians joined 764 delegates from other countries in the congress. While most of the attendees were Asians, the organizers invited notable experts from Europe and America to share their experiences in the prevention, mitigation, control and eradication of African Swine Fever. Originally planned to be held in Busan, the transfer was only decided in the last 2 months and was necessary because of an ASF outbreak in North Korea. Many registrants backed out or refused entry as they would come directly from other ASF affected countries notably China, Vietnam, Cambodia, and Laos. We flew to Seoul amid the news of dying pigs in Rodriguez and Antipolo. Rizal.

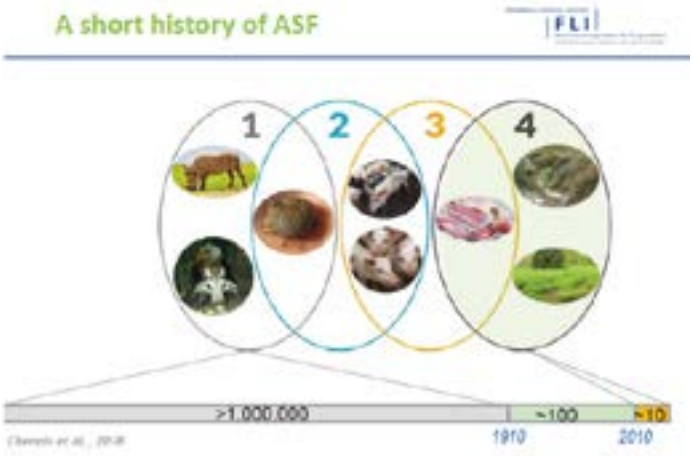
Being a member of the APVS Board of Directors, our pre-congress meeting focused on the status and planned actions/reactions to ASF infection. We centered our discussion to the reports of China, Vietnam, Cambodia and Laos being the countries affected during that time. All these countries reported culling millions of pigs due to ASF. Since ASF is a transboundary disease, checkpoints were established immediately and disinfected facilities, trucks and equipment. Centralized kitchens were put up in farming communities to cook swill or kitchen scraps before distributing them to backyard swine farmers particularly in Vietnam. Strict farm biosecurity protocols were implemented. Dr. Qigai He from China mentioned doing necropsy on pigs when they are already in the burial pit lined with plastic sheets to avoid spilling blood on the ground that would eventually affect the water table. Dr. He said they paid specific attention the very large hemorrhagic spleen of a pig with ASF. They collected whole blood, lymphatic fluids and other tissues for PCR from each pig and culling all of those testing positive. If the farm mortality subsides in 3 months, the farm is allowed to re-populate with 1-2 sentinel pigs per pen. PCR is done on the sentinels every 1-2 weeks for the next 1-2 months. If the sentinels tested negative, they declare the farm clear of ASF. The same protocol is done by other affected countries.

ASF FORUM

The organizers dedicated the last day to an ASF forum. Unlike previous conventions, it was a well-attended closing day. The ASF problem in Asia was real and threatening the availability of pork in the dinner table. The forum highlighted the presentations of Drs. Klaus Depner of Germany, Yolanda Revilla Novella from Spain and Caitlin Holley representing the OIE.

TEXTBOOKS ARE WRONG ON ASF

Dr. Depner presented the topic on understanding ASF and major challenges to control the disease. He started by describing a domestic pig with ASFV developing a severe hemorrhagic disease ending in death within a couple days (Plowright,1994). If the diseased pigs or its secretions come into contact with other pigs, most of these will become infected and meet the same destiny (Taylor, 2006). Thus, he worked on the hypotheses that ASF will fade out rapidly due to high mortality and that it will spread rapidly initiating an epidemic wave. However, later years revealed that both hypotheses were wrong. There was no implosion nor explosion. ASF turned out to be endemic in the region that spread slowly.



Dr. Depner showed a domestic cycle for ASF stressing the recent infection of pigs by contaminated products. He cited the less efficient virus transmission through oral infection. He noted that a direct oral transmission between domestic pigs in the absence of ticks are “atypical transmission”.

Contagiosity depends on virus dose, infectious material, the animal behavior and its management. The ASF virus is relatively stable. ASFV stays indefinitely in frozen meat and almost one year in dry meat and fat. It stays more than 3 months in blood, offal and salted meat with over one week in feces. Dr. Depner emphasized that ASFV survives the process of putrefaction and carcasses may remain infectious for weeks. However, the survival duration of ASF virus in any material is decreased by temperature.

In the blood fraction, 90% of ASFV is associated with erythrocytes (Wardley et al, 1977). It is wrapped safely into erythrocyte membranes (Bastos et al, 2003, Gallardo et al 2009). The estimated life span of porcine erythrocyte is about 65 to 85 days (Liebich,2003). Thus, clearance of the virus may take up to 3 months.

Dr. Depner noted that the percentage of animals which get infected after contact with a pathogen is around 10-30%. It is not an indicator for disease severity and impact. With his new findings, later years showed that what the textbooks say about ASF were wrong! The latest key epidemiological characteristic of ASFV are:

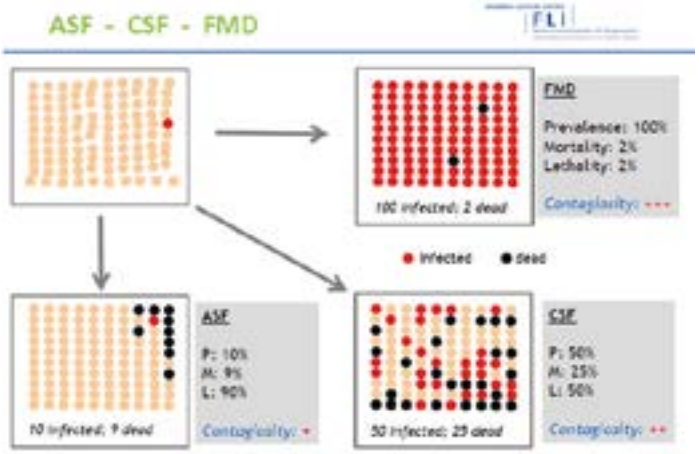
1. ASF in the field is not highly contagious but with high case fatality (>90%), low initial mortality (<5%), low prevalence (<5%) and not necessarily a density dependent process.
2. ASF is slow spreading with side fidelity (habitat disease)

3. Survivors are not necessarily carriers and carriers are not shedders. There is no epidemiological relevance in an epidemic without tick involvement.
4. Mild strains are disadvantaged due to the low case fatality: only indirect transmission via ticks would facilitate virus survival.
5. Early detection is only by passive surveillance.

Despite what the textbooks say, ASF is not a highly contagious disease – BUT it is highly lethal

The qualities of three epidemiological traits make ASFV efficient in persistence and transmission. These are: 1) its low contagiosity which prevents fast and complete depletion of the host population 2) high case fatality that makes the virus largely available in the form of carcasses and 3) high tenacity ensuring long term virus persistence in the environment. The interaction of these three parameters maximize local persistence and limits geographical spread.

In passive surveillance, the probability of detecting ASF is higher in sick or dead animals than in randomly sampled healthy ones. The findings are a staggering almost 80% positive cases in wild boars found dead compared to less than 2% in active or hunted.



Comparing ASF to Foot and Mouth Disease and Classical Swine Fever or Hog Cholera, Dr. Depner showed the high contagiosity in FMD with very low mortality and CSF with moderate contagiosity and lethality as well. ASF has low contagiosity but very high lethality.

The PCSP is thankful to Dr. Klaus Depner for sharing his knowledge and presentation slides with us.

VACCINATION – STILL LOOKING

Dr. Yolanda Sevilla in her presentation related how Spain eradicated ASF after 30 years (1960-1990). She said that producing ASFV vaccines are feasible but not easy. The complexity of the virus makes it difficult to develop a potent vaccine. Initially, she tested inactivated, sub-unit, and DNA based vaccines. All her attempts failed to confer full protection against lethal viral challenge. Using live attenuated vaccines conferred full protection against homologous and heterologous challenge, but side effects and safety concerns are serious issues.

In a related note, Dr. Depner also mentions that it is not only having an ASF vaccine but also having a good vaccination strategy that will determine successful disease control. He quotes the OIE –"Thus the decision whether to recommend vaccination as a part of animal disease control strategy requires a thorough knowledge of the characteristics of the disease agent and its epidemiology as well as the characteristics of the vaccines."

BIOSECURITY – THE ONLY TOOL

This is the most effective and only potent tool to date if we are to control the ASF virus. Dr. Depner recounts that there were outbreak cases where some farms have been able to evade infection by just doing three simple biosecurity rules namely 1) No swill feeding 2) No contact with strangers 3) Change boots before entering the farm.

Since ASF is stable in domestic pigs. The successful approach entails the following measures: Standstill; Culling and; Cleaning and disinfection. In areas with wild boars wherein it's virtually stable in the forest, measures taken should be: Standstill (no disturbance of wild boars, no hunting, provision of electrical fence; No trapping and; Proper disposal of carcasses. Thankfully, the Philippines has no report of the ticks present in our wild pigs.

Dr. Caitlin Holley of the OIE also shares what the Biosecurity recommendations are in Europe (based on SFE GFTADS Europe – SGE ASF 2), here are some of the more applicable ones for us in the Philippines:
- No swill feeding;
- Pigs should be introduced from trusted and certified sources;
- Visitors should be discouraged to enter the pig farms;
- Personnel should be well-trained/informed and contact with other pigs or wild boar forbidden;
- Perimeter fencing preventing contact with feral pigs (double fences) should be installed;
- Carcasses, discarded parts from slaughtered pigs and food waste should be disposed of in an appropriate manner;
- Sharing of equipment and tools between the holding should be avoided;
- Appropriate means for cleaning and disinfection have to be placed at the entrance of the farm buildings. Effective disinfectants shall be available in the holding;
- Vehicles and equipment should be properly cleaned and disinfected before entering into contact with pigs and leaving the holdings;
- Proper hygiene should be done before coming in contact with pigs.

ASF – A HUMAN DRIVEN DISEASE!

Dr. Holley emphasized, humans are the main cause of long distance transmission and virus introduction into pig farms. Thus, it is crucial to include social science when planning prevention, control or eradication measures. By considering only the biological characteristics of the disease, BUT ignoring the social aspects, the epidemic will not be controlled. Her final slide lists the following key messages:

We need to:
- Understand pig value chains
- Have good passive surveillance systems to early detect the virus
- Rapid response with effective quarantine and biosecurity measures
- Reduce viral load
- Work together!!!

Finally, any plans to control ASF will only be successful if all farms, authorities, veterinarians and media will cooperate and act as ONE.

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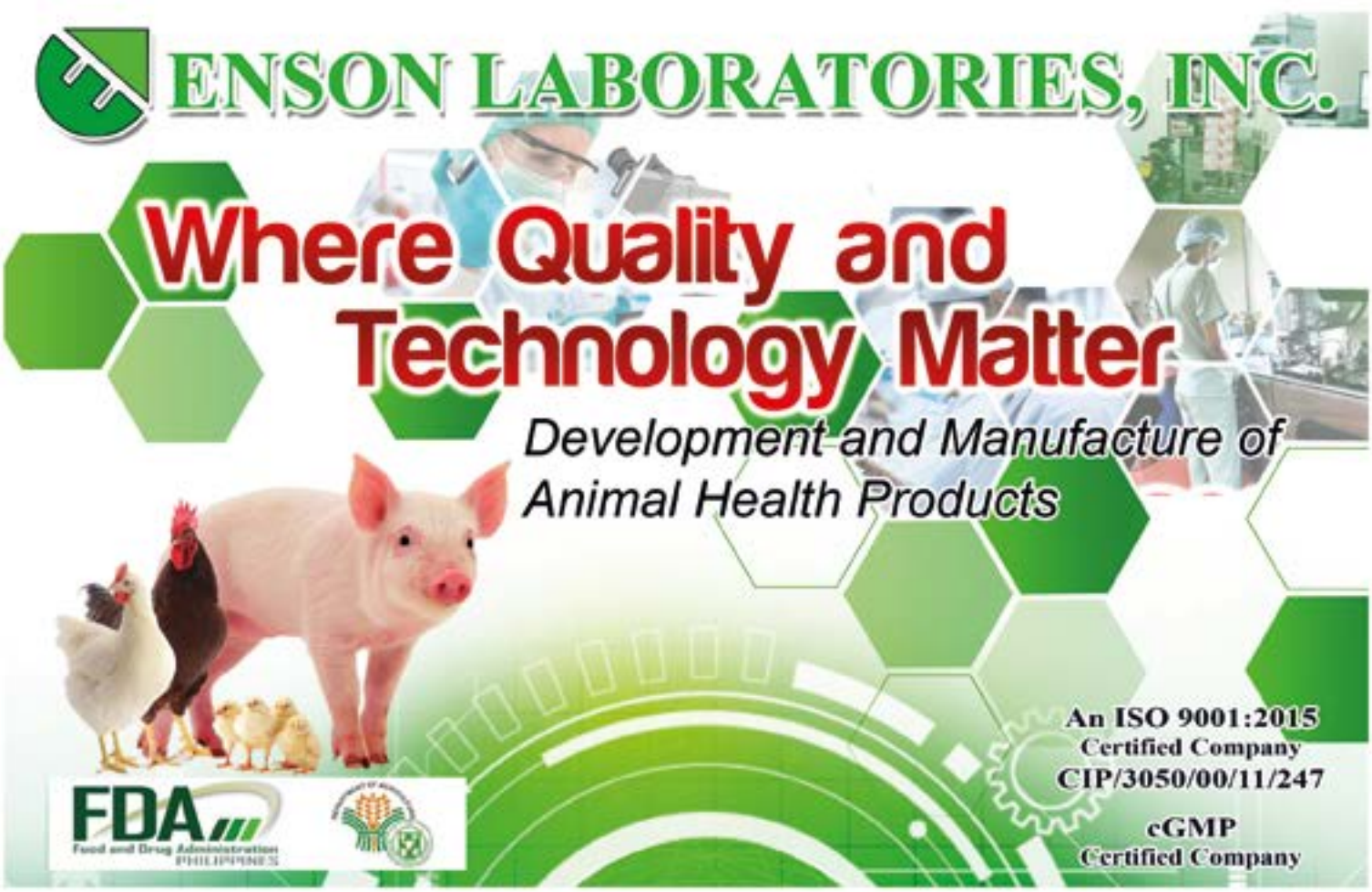

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