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POST REPORT

World Antimicrobial Awareness Week 2020

FAO-FAVA-DLD-TVMA-VNU bi-lingual webinar:

Biosecurity towards infection prevention and improved livelihoods



23rd November 2020

13.30-16.30 hrs. (ICT/Bangkok time)

Organized by

VNU ASIA PACIFIC



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Agenda



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World Antimicrobial Awareness Week 2020

FAO-FAVA-DLD-TVMA-VNU bi-lingual webinar:
Biosecurity towards infection prevention and improved livelihoods
23rd November 2020; 13.30-16.30 (ICT/Bangkok time)



speaker
Dr. Quaza Nizamuddin
Bin Hassan Nizam



speaker
Dr. Somchuan
Ratanamungklanon



speaker
Dr. Kachen
Wongsathapornchai



speaker
Dr. Julaporn Srinha



speaker and moderator
Prof. Dr. Acharya Sailasuta



speaker
Prof. Dr. Bambang
Pontjo Priosoeryanto



speaker
Dr. Mary Joy Gordoncillo



speaker
Dr. Rodolphe Mader



speaker
Dr. Yooni Oh



speaker
Dr. Makara Hak



speaker
Dr. Gynawan Utomo



speaker
Dr. David Hadriil



speaker
Dr. Pawin Padungtod

13.30-13.35	Opening Address by Dr. Quaza Nizamuddin Bin Hassan Nizam, FAVA President (Eng)
13.35-13.40	Welcome Message <i>Dr. Somchuan Ratanamungklanon, Deputy Director-General, Department of Livestock Development, MOAC, Thailand; and, TVMA President (Thai)</i>
13.40-13.45	Welcome Message <i>Dr. Kachen Wongsathapornchai, Emergency Centre for Transboundary Animal Diseases (ECTAD) Food and Agriculture Organization of the United Nations (FAO) Regional Office for Asia and the Pacific</i>
13.45-14.30	AMR is here now: United to strengthen food safety and improved livelihoods <i>Panel discussion with the FAO ECTAD Team of Asia, to be moderated by Dr. Mary Joy Gordoncillo and Dr. Rodolphe Mader, FAO RAP (Eng)</i>
14.30-15.15	Raised Without Antibiotic (RWA) and Farm Biosecurity <i>Dr. Julaporn Srinha, Veterinarian, Senior Professional level, Head of Veterinary products and AMR Containment, Division of Animal Feed and Veterinary Product control Department of Livestock Development, MOAC, Thailand (Eng)</i>
15.15-15.30	General discussions/Q&A (Thai)/VDO from the seminar by FAVA Member Countries <i>Dr. Acharya Sailasuta, Moderator (Thai/Eng)</i>
15.30-15.45	Regional campaign to enhance farm biosecurity for small to medium-scale poultry farms, WAAW 2020 <i>Prof. Dr. Acharya Sailasuta, Director of FAVA office, Bangkok (Eng)</i>
15.45-16.10	Final round presentation of the candidates & Competition Finalists
16.10-16.20	Announcement of winners of the housing design competition for small-scale poultry farming in Asia 2020 FAVA and FAO (Eng)
16.20-16.30	Closing Remarks by Prof. Dr. Bambang Pontjo Priosoeryanto, FAVA Secretary-General (Eng)

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Introduction and welcome by Prof.Dr.Achariya Sailasuta, Director of FAVA office, Bangkok, Thailand

Sawasdeekha, Good afternoon from Bangkok. It's my great pleasure to be a moderator of this webinar which we have the good collaborations among The Food and Agriculture Organization of the United Nations (FAO), Federation of Asian Veterinary Associations (FAVA), Department of Livestock Development, Ministry of Agriculture and Cooperatives, Thailand, Thai Veterinary Medical Association under Royal Patronage (TVMA) and VNU Exhibitions Asia Pacific to organize an activity for World Antimicrobial Awareness Week 2020 campaign during 18-24 November 2020. In Thailand there are many activities for this campaign last week for example Thailand's World Antimicrobial Awareness Week, 2020 on 16 November, World Antibiotic Awareness Weeks in Faculty of Veterinary Science, Chulalongkorn University during 16-18 November and our neighbor countries also organize many activities and it will be shared on our today's program.

This webinar is the special conferences to celebrating World Antimicrobial Awareness Week 2020.

Our webinar will be bi-lingual English and Thai, the attendee can select the interpretation channel on the below menu. Today, we have an excellent interpreter with us, Prof. Dr. Rungtip Chuanchuen, Head of Department of Veterinary Public Health and Director of AMR Center, Faculty of Veterinary Science, Chulalongkorn University, Focal point of Global Foodborne Infections Network: South -East Asia and Western Pacific Region, Focal Point of FAO AMR Reference Center and Dr. Chanika Pungpien, Faculty of Veterinary Science, Chulalongkorn University, Bangkok, Thailand.

Opening Address by Dr Quaza Nizamuddin Bin Hassan Nizam, FAVA President

Hello everyone.

Greetings to all professionals in the veterinary fraternity as well as farmers, and industry players in the livestock sector.

I am indeed privileged and thank the organizing committee for giving me this opportunity to speak to you all in this important event.

FAVA or Federation of Asian Veterinary Associations is a 25 members association comprising of 21 member countries in the Asia Oceania region with 3 associate and 1 affiliate members. The outreach is more than 100,000 veterinarians. FAVA plays an important role in working with national veterinary associations to carry out programs, projects and activities to benefit member associations.

This is one such project where we at FAVA are collaborating with FAO to carry out 2 activities in conjunction with World Antimicrobial Awareness Week 2020.

One is on poultry housing design campaign for small to medium size farm and the other is to conduct webinars in 5 member countries in their local language.

FAVA would like to thank FAO for supporting with the necessary funds to undertake these activities.

This year's theme Antimicrobials: Handle with Care is indeed apt and timely.

WHO-OIE-FAO also decided that from now on antimicrobial is not limited to antibiotics but also encompasses antiviral, antifungal and antiprotzoal.

It has been reported that if we fail to take the necessary action, 10 million people are projected to die in 2050 from Anti-Microbial Resistance.

It will cost a cumulative loss of USD100 trillion to the global economy.

The intensification of the livestock industry has resulted in the increased use of antimicrobials as growth promoters and for preventive measures.

This has resulted in the reporting of antimicrobial residues and resistance

Farm workers can be exposed to resistant bacteria as well people handling meat or consuming them or even from the contamination of water.

As you may have read gene conveying colistin resistance was already found.

Hence, we need to protect the critically important antimicrobials used for humans to be phased out from use in livestock.

More importantly, we need to be vigilant in using antimicrobials responsibly and prudently.

We need to improve biosecurity at farm levels to prevent and minimize the introduction of pathogens into the farms.

We need to explore the use of alternative products to replace antimicrobials such as vaccines, prebiotics, probiotics and enzymes.

If we can raise the awareness and map out and put in place all the mentioned good practices, then we have a good chance for reducing future AMR issues.

It is in our hands to work together with all stakeholders and save us and the planet from the negative consequences of antimicrobial resistance.

I urge all members to ponder and take the necessary and appropriate action for the future of the world.

Thank you and I wish you all a successful webinar and together we will try and make a difference.
STAY SAFE AND STAY HEALTHY

Welcome Message by Dr. Somchuan Ratanamungklanon, Deputy Director-General, Department of Livestock Development, MOAC, Thailand; and, TVMA President

President of the Federation of Asian Veterinary Associations (FAVA),
Representatives of the Food and Agriculture Organization of the United Nations, Asia and Pacific
Regional Office (FAORAP) and all participants.

I am Dr. Somchuan Rattanamangkalanon. As Deputy Director-General of the Department of Livestock Development (DLD) and President of the Thai Veterinary Medical Association under the royal patronage (TVMA). I am honored and delighted that DLD and TVMA have the opportunity to be part of the World Antimicrobial Awareness Week 2020 campaign and co-host this webinar in collaboration with FAVA and FAORAP under the concept "Biosecurity Towards Infection Prevention and Improved Livelihoods "

We all have realized that antimicrobial resistance (AMR) is a threat to human, animal and environmental health. This marks a global agenda that requires cooperation from all sectors and professions, under One Health concept in order to raise awareness and share responsibilities to control and prevent the AMR crisis.

DLD and TVMA have worked in close collaboration to drive Thai livestock to its stability, wealthy and sustainability in the world market. They aim to reduce the quantity of antibiotic use in livestock by 30% in year 2021 and have a mission to set policy direction, direct control strategies and promote research and technology transfer. These will be aligned with Thailand's AMR management strategy.

The collaboration has aimed to disseminate knowledge and promote veterinary professional development as well as provide advice to general public on livestock and animal husbandry. These activities are to promote the safety of consumers, environment and responsible antimicrobial usage, according to international standards.

Being a co-host for this event is as part of Thailand's missions in the AMR management. This webinar focuses on building biosecurity to protect and promote a better life, supporting the global action plan in raising awareness and prevention and control of AMR crisis.

DLD and TVMA have supported the WAAW 2020 campaign to raise awareness, reduce AMR and stimulate the collaboration among all sectors, with the goal to build a solidarity for the safety and sustainability of One health

Finally, I sincerely hope that this webinar will be successful with the achieved objectives. It will also yield benefits in building knowledge and awareness of multidrug resistance infections at both national and international level. Lastly, I wish the WAAW 2020 to accomplish all objectives.

Thank you

Welcome speech by Dr. Kachen Wongsathapornchai, Regional Manager, OiC, Emergency Centre for Transboundary Animal Diseases, FAO RAP

Dr. Quaza Nizammuddin bin Hassan Nizam, President of FAVA

Dr. Somchuan Ratanamungklanon, President of TVMA

Prof. Dr. Achariya Sailasuta, Director of FAVA Secretariat Office in Thailand

Prof. Dr. Bambang Pontjo Priosoeryanto, FAVA Secretary General

Speakers

My fellow veterinarians in the region

And all participants

Good afternoon – good morning – good evening, depending on where you are.

Welcome you all to the regional celebration of the World Antimicrobial Awareness Week 2020, which is being organized jointly by FAO, FAVA, DLD, TVMA, and VNU.

I learned that leading to this regional celebration, there have been a series of 5 national events being held by national veterinary associations in the Philippines, Indonesia, Malaysia, and Thailand since November 11, and there will be another one in Viet Nam tomorrow. This would not be possible without the collaboration and coordination with national veterinary associations in various countries in Asia by FAVA, and I wish to express my thanks to them.

The Global theme of FAO for the WAAW this year is “United to strengthen food systems and secure livelihoods.”

In the Asia and the Pacific region, we are translating this highlight the significance of biosecurity and overall infection prevention and control in food and agriculture sectors, and how it contributes to our efforts on AMR and beyond.

The world is currently grappling with the COVID-19 pandemic. Yet we are still pushing to have this celebration in virtual format. One may ask, why do we observe WAAW at a time such as this? Of course, AMR is still a very important issue, and we cannot let our guards down for preparedness needs (such as for antimicrobial resistance); we need to continue to be vigilant amidst other competing urgent priorities.

Inadequate infection prevention measures and agriculture production practices are major drivers of the misuse and overuse of antimicrobials.

Veterinarians have important roles to play. We are the frontline in the promotion and implementation of infection prevention and control in livestock sector, contributing to strengthening food systems and securing livelihoods.

Not only AMR, many of these improved practices can also help to protect against potentially devastating losses from infectious diseases and make agriculture production more sustainable.

FAO will continue supporting Members in improving terrestrial and aquatic animal production to reduce the incidence of infections, thereby reducing dependence on antimicrobials through better health, hygiene, sanitation and biosecurity practices.

A veterinarian has the opportunity to contribute to:

- protecting animal
- protecting public health
- securing food for the growing population
- addressing hunger and improving livelihoods, particularly the rural poor
- contributing to global health issues such as AMR

WAAW is a time to acknowledge and be reminded that:

- everyone has a significant contribution
- there is potential synergy when all these various contributions come together under one shared vision

I thank everyone for being here today, at least virtually, to show to us that you are sharing the same vision as us.

I also would like to thank our resource partners, the United States Agency for International Development, and the government of the United Kingdom, for continuing to support AMR efforts in the region and for making this event happen.

AMR is here now: United to strengthen food safety and improved livelihoods: Panel discussion with the FAO ECTAD Team of Asia, to be moderated by Dr. Mary Joy Gordoncillo and Dr Rodolphe Mader, FAO RAP

SUMMARY OF FAO RESOURCES ON GOOD PRACTICES can be found [here](#)

1. Video resources and examples from around the region
2. Prudent use of antimicrobials in animals
3. Improving farming practices and biosecurity
4. Evidence-based risk management along the livestock production and market chain

Raised Without Antibiotic (RWA) and Farm Biosecurity by Dr Julaporn Srinha, Veterinarian, Senior Professional level, Head of Veterinary products and AMR Containment, Division of Animal Feed and Veterinary Product control, Department of Livestock Development, MOAC, Thailand

Thailand's National Strategic Plan on AMR 2017 2021

1. AMR surveillance system using a "One Health" approach
2. Regulation of antimicrobial distribution
3. Infection prevention and control and antimicrobial stewardship in human
4. AMR prevention and control and antimicrobial stewardship in agriculture and animals
5. Public knowledge on AMR and awareness of appropriate use of antimicrobials
6. Governance mechanisms to develop and sustain AMR related actions

Raised Without Antibiotics (RWA)

- Rational use of antibiotics
- Reduction of AMR problem
- Healthy food option for consumer

Requirements for applicant

- Certification of GAP Farm: Pigs, Layers, Free range poultry, Deep litter pigs
- Certification of β Agonist free farm: Pigs
- Slaughterhouse standard licensed
- Certification of retailers (DLD OK)
- Effective traceability system
- Intention of farmers for voluntary raising animal without antibiotics use

Criteria for medicinal use in farms

- Not permit the use of antibiotics from born to harvest
(However, sick animals have to treat and separate from RWA system in accordance with the animal welfare)
- Permit the use of coccidiostats
- Possible use of preventive measures such as vaccination and alternatives (Pre/Probiotics, Herbs)

Certification process

- Inspection farms by Audit team (Provincial/District Livestock officers)
- Collecting samples for drug residue testing
- Feed and Water at Farms
- Meat at Slaughters and Retailers
- Certification valid for 1 Year and Publish at www.afvc.dld.go.th

Link to the presentation is [here](#)

VDO from the seminar by FAVA Member Countries

19th November 2020, from 8.30 am onwards (ICT/ Bangkok time):

Webinar on “Strengthening Indonesian veterinarian understanding on antimicrobial stewardship (AMS)”

Organizer: Indonesian Veterinary Medical Association (IVMA)

Webinar’s Channel:

Facebook Live at PDHI Facebook Page: <https://www.facebook.com/pbpdhi/>

21st November 2020, from 9.00 am onwards (ICT/ Bangkok time):

Webinar on: “Enhancing Awareness on Antimicrobial Resistance in Livestock in Myanmar”

Organizer: Myanmar Veterinary Association

Webinar’s Channels:

1. Zoom Meeting:

<https://us05web.zoom.us/j/88498947776?pwd=dFh2azFoNVl3S2JtT2VZV1RaSkk2QT09>

Meeting ID: 884 9894 7776

Passcode: mva2020

2. Facebook Live Stream (University of Veterinary Science Facebook Page):

<https://www.facebook.com/uvsyznmyanmar/>

24th November 2020, 8.00am-12.00 pm (ICT/Bangkok time) in Malaysian language

Webinar’s Channels:

1. Zoom Meeting

<https://us02web.zoom.us/j/83555215466?pwd=Qm5VWm0rUDZMR3UwRlo4aUo1QWkwdz09>

Meeting ID: 835 5521 5466

Passcode: 506066

2. Facebook Live Streaming at <https://www.facebook.com/VeterinaryAssociationMalaysia2015/>

Hosted by the Veterinary Association Malaysia

Regional campaign to enhance farm biosecurity for small to medium-scale poultry farms, WAAW 2020 by Prof. Dr Achariya Sailasuta, Director of FAVA office, Bangkok

The WAAW 2020 in the Asia-Pacific Region collaboratively celebrate Federation of Asian Veterinary Associations (FAVA) and Food and Agriculture Organization Regional Office for Asia and the Pacific (FAO RAP)

FAVA was founded in 1978 in Manila, Philippines

Vision:

FAVA will be recognized by the public as a unified professional association serving the veterinary needs of the region.

Mission:

To enhance the quality of life of the people in the region through responsible animal care and welfare by unified professional association

FAVA STRATEGY PLANS (2016-2020)

- One Health Emerging and re-emerging particularly zoonotic diseases and their controls (epidemiology), food security, food safety, food hygiene (veterinary public health), antimicrobial resistance (AMR)

- Animal Welfare of all animals in the Asia Pacific region with a multi-faceted approach the 38th FAVA council meeting & 19th FAVA Congress, 5-6 September 2016, HoChiMinh City, Vietnam

FAVA-FAO's Regional Campaign

1. Regional Campaign to enhance farm biosecurity for poultry farms
2. WAAW 2020's satellite webinars

Our journey together to fight with AMR

Thank you for taking part in WAAW 2020.

Link to the presentation is [here](#)

Summary/ Key Message Award Announcement Session:

Introductory part: Dr. Jutamart Jatuchai, WAAW Design Challenge 2020, Project Coordinator

It's my honor being a part of the campaign and being here in the session. Without any further due, kindly let me quickly walk you all through the aim and the criteria of this competition or WAAW Design Challenge 2020. This contest is organized under the theme of the Biosecurity towards infection prevention and improved livelihoods. It aims to particularly promote the biosecurity management and good animal husbandry practices for the mitigation of AMR's spread and its risks. Entries must highlight designs reinforcing the implementation of the biosecurity measures for small-scale producers/farmers, but are also cost-efficient, compatible with local conditions and settings, and socio-culturally acceptable overall. The design needs to basically in line with the following 6 criteria:

1. Compliance to basic biosecurity management manual and good animal husbandry practices for poultry (40%)
2. Technical quality and clarity of specifications of the schematic design (15%)
3. Ease of adaption of the design under local settings Asia (15%)
4. Cost efficiency of the design (15%)
5. Originality, uniqueness or innovativeness of the design (10%)
6. Collaborative nature of the design development process (5%)

We received 37 entries as 24 collaborative Groups and 13 Individuals who are from 8 countries in the Asia and the Pacific, including

• Australia	1	• Malaysia	6
• Bangladesh	10	• Nepal	3
• India	5	• Philippines	6
• Indonesia	4	• and Thailand	2

Award Announcement: Dr. Quaza

On behalf of the Federation of Asian Veterinary Association (FAVA), we would like to express our sincere gratitude towards all of your support for the "Hosing Design Competition for small-scale poultry farming in Asia" or "WAAW Design Challenge 2020". Thanks to the honorable judges and experts from FAVA and FAO, we could successfully select the design with the most prominent biosecurity measure from those various interesting approaches in concepts, functions and types. We would like to congratulate and announce the award winners as follows:

First Prize (two entries sharing the prizes of first and second awards merged together):

1. Erwin Joseph S. Cruz, Philippines (individual submission)
2. Collaborative team, Philippines: Mr. Gerard Honesto I. Llanes, Jr, Mr. Joseph Abelardo, Mr. Albert Teh

Third Prize:

Collaborative team, Indonesia: Ms. Jasmine Deansyah and Ms. Aafini Rizqia Kamal

Once again, we appreciate each of everyone's support, including the testers, judges and participants for this FAVA-FAO collaborative campaign.

Closing message from FAVA secretary general

First of all, on behalf of FAVA, we are very happy that a FAVA Webinar series on the celebration of World Antimicrobial Awareness Week (WAAW)) 2020 this year which was fully supported by FAO Regional office for Asia & Pacific (FAORAP) were held in 5 FAVA member countries: Philippines, Indonesia, Myanmar, Malaysia and Thailand were very successful held under the Regional Campaign to enhance farm biosecurity for small to medium scale poultry farms, WAAW 2020.

In this opportunity FAVA would like to thanks to :

1. FAO Regional office for Asia & Pacific (FAORAP) who fully supported this series of webinars as well as the housing design competition for small-scale poultry farms without which these activities will not be possible.
2. The judging committee from both FAO and FAVA, which are Dr. Katinka de Balogh, Senior Animal Health and Production Officer, FAORAP, Dr. Kachen Wongsathapornchai, Emergency center for Transboundary Animal Diseases, FAORAP, representative from Japan Veterinary Medical Association, Prof. Dr. Kazuaki Takehara, Tokyo Agricultural University Agriculture, Japan, Thai Veterinary Medical Association under Royal Patronage, Dr. Katchaporn Temyod, Secretary General of TVMA and importantly the Chair of the committee, Dr. Quaza Nizamuddin Bin Hassan Nizam, President of FAVA for their generous contribution to the competition.
3. Five FAVA member countries, Dr. Corazon Occidental President of PVMA, Dr. Muhammad Munawaroh, President of IVMA, Prof. Tin Ngwe President of MVA, Dr. Norlizan Mohd Noor, President of VAM and Dr. Somchuan Rattanamungsklanon, President of TVMA and their committee who worked very hard to prepare and hold the successful webinars on WAAW 2020.
4. All speakers in every webinar who shared their valuable information and experience in their expertise on AMR in order to reduce the AMR in Asian countries.
5. VNU Exhibitions Asia Pacific FAVA affiliate member for facilitating and coordinating today's webinar.
6. All FAVA partners who cannot be listed one by one who were helping and participating in this series of webinars.

Finally, by the end of today's webinar, I would like to officially close the FAVA Webinar series on the participation of the celebration of World Antimicrobial Awareness Week (WAAW) 2020 with a note that one webinar coordinated by VAM will be held tomorrow in Malaysia on 24th November. In this very hard time due to Covid -2019 pandemic we hope that all of you will be safe and in good condition of health. Stay healthy. Thank you very much for your kind participation.

Prof. Dr. Bambang Pontjo Priosoeryanto
FAVA Secretary General

Q&A list

No.	Question	Answer(s)
1	From Brigitta Solo Indonesia. To Panelist. What the specific biosecurity to each livestock or just a general ?? because the specific disease needed different raw material disinfectant to control it, that's mean to help the farmer easier to do. thank you	<p>General biosecurity measure:</p> <ul style="list-style-type: none"> - Washing hands before and after attending animals - Changing footwear and clothes - Use tools and equipment only for the stable - Build fences to avoid contact from unhealthy animals
2	To reduce use of antibiotics in broiler chickens, especially in first week of life, wherein the concern is mycoplasma contaminants from hatchery or from breeder hens, what do you recommend to replace for antibiotics used by some broiler chicken farms?	<p>Response #1: Good animal husbandry during brooding period i.e. adjust the temperature appropriately. If the birds are healthy, they do not need antibiotics.</p> <p>Response #2: In many countries: using Mg free (Ms is considered less pathogenic (on average)) parent stock is by far the best way to prevent Mg problems in the progeny. In many Asian countries, this is not realistic, the prevalence of Mg is too high (for eradication). So they vaccinate the breeders and treat them with antibiotics. Treatments of the breeders can be regular, based on antibody titers (rise is indication for treatment) or looking at (percentage of) airsac lesions of chicks that did not or poorly hatch. This method is not very reliable but many people trust it anyway. Several bacteria play a role in the first week mortality: E. coli (number one worldwide), Enterococci, Streptococci, Staphylococci, sometimes others. Problems due to Mg (and maybe Ms) usually come later. The vertical transmission of Mg/Ms is usually at a low level and it takes time to spread. Treatments for first week mortality are usually not for Mg/Ms alone, it's against a number of bacteria. It is theoretical to assume that solving the Mg problem would solve the first week mortality problem. For this, it needs a very high level of hygiene for the hatching eggs (starting already before the egg is laid) and hatching.</p> <p>Response #3: In my point of view, focus on the management and measurement of parent stocks and one day old chick to free from Mycoplasma, especially biosecurity system.</p> <p>To summarize: replacing antibiotics by something else (product X) on farms that treat for Mg in the first week of life is not very realistic as this product X would need to work against the other bacteria as well. If the other bacteria are not under control, they will use product X AND antibiotics. Product X would be 'hatching egg management'.</p>

No.	Question	Answer(s)
3	Biosecurity aimed for safe the animal for pathogen microorganism in order to get high revenue for farmer. But, sometime when to do biosecurity zone is required more investment. I think for company farm is okay for this investment, but for small scale farmer it is difficult. What is the solution about this condition?	The experience from Indonesia and Cambodia showed that simple inexpensive measures do work. Part of the solution is health communication, to transform perceptions.
4	what are the poultry farmer options to replace AGPs still being used in many ASEAN countries?	1. Biosecurity 2. quality of feed 3. herd health management 4. alternative such as probiotics, prebiotics and herbs
5	what kinds of antibiotics food animal producers must refrain from using because it is a common antibiotic used nowadays in human medicine?	There are categories of antimicrobials for human health by WHO. Emphasis is placed on high priority critically important antimicrobials (https://www.who.int/foodsafety/areas_work/antimicrobial-resistance/cia/en/). If we also consider the OIE list (https://www.oie.int/fileadmin/Home/eng/Our_scientific_expertise/docs/pdf/AMR/A_OIE_List_antimicrobials_May2018.pdf), you will not that common to both are 3rd gen cephalosporins, fluoroquinolones and macrolides.
6	Dr Pawin, you said that, you are doing a lot bio security training to help increase the revenue at swine, poultry farm. Could you share with us exactly what you did? because it is very difficult to evaluate the benefit of biosecurity. and it takes long time to see the difference, and very difficult to repeat every day. TKS	We use the biosecurity checklist to assess the biosecurity gaps in the farms including infrastructure, hygiene and animal husbandry practices, etc. Then develop customized biosecurity improvement plan for the farm. Usually, the plan would involve changing of practices and some small investment such as buying boots. Some farmers redesigned water drinkers to protect birds jumping on the open pipe. I do not think it takes long to see the benefit. Some of our model farms gained increased profit after the first batch already.
7	Do we have any data on cost of biosecurity, if we would to budget operation cost?	There are some publications on this; Dr Pawin shared experience from Viet Nam on this, and also Dr Gunawan. Hope this helps! Along this answer, please find the publication: "Economic analysis of enhanced biosecurity practices in three types of chicken farms in Northern Vietnam" from Pawin.
8	natural phytogetic materials in feeds and liquid supplement like immuno modulators and hepato regulators, are these products a viable option for swine and poultry farmers?	Hi Doc! There are several alternatives currently being explored. One issue however, aside from effectivity of course, is cost-efficiency for large-scale needs. Some are shown to work, but difficult to produce on a broader scale. There was a conference devoted to this specific topic last year (2nd Conf on Alternative to Antimicrobials) the proceedings of which I believe is available online.

No.	Question	Answer(s)
9	In terms of poor-quality antibiotics contributing to the problem of AMR, can you give us a sense of scale here? Phuc from VOHUN	A small survey conducted in Viet Nam reported approximately 10% of products do not meet (both higher and lower) their label.
10	What biosecurity protocols anyone believe can stop or mitigate ASF as it is devastating agricultural economy of many Asean countries, including us in the Philippines.	ASF, so far biosecurity is only measure to tackle ASF... to start with, building fences and limiting free roaming of pigs.. then management of swill... Please check the animation we created recently for basic farm biosecurity: https://youtu.be/XdKRY1Hf9hA we are also planning to have more language versions (inc PHP)
11	What kinds of disinfectant is effective if there is any viral outbreak in breeder farm	There may be slight differences regarding the best disinfectant to choose depending on the type of virus causing the outbreak. For your information, here is a link to an OIE presentation on the disinfectants that can be used for ASF: https://rr-asia.oie.int/wp-content/uploads/2019/12/4-disinfectants.pdf
12	Can acidifier and probiotics is the alternative of antibiotic in Broiler farm??	Yes, in Thailand we use probiotics which are feed additives to reduce antibiotics use.
13	From Michael Indra (Bogor-West Java). Beside to measure the animal performances, how to conclude biosecurity implemented will be successful or not within small scale farm segment	The farm environment i.e. smell could be an indicator that the changing practices / infrastructure help reduce environmental impact as well
14	Although we know biosecurity is the cheapest investment in the farm', when most of the farms are small scale household and farmers are illiterate, how could we adopt good biosecurity? any idea?	as shown in other country experiences, we can start with something feasible. Biosecurity does not always link to huge investment... starting from wash hands and changing footwear/clothes... we can gradually change concepts of farmers...
15	In biosecurity it is very important to give education to the staff. The role of veterinarians is very important. Why is it so hard to visit farms inside instead of outside when a veterinarian is the first person to detect diseases and give solutions?	Response #1 : Biosecurity practices or protocols should be developed based on the risk assessment. Veterinarian visiting many farms in one day without adequate PPE may be a risk. However, the farm can put in biosecurity procedures for the veterinarian to follow before going into the animal house. Response #2: Pathogen can carry via veterinarians who walk inside so many farms. Sometimes we need about 7 days before visiting the next farm.

No.	Question	Answer(s)
16	Human resource management is most important in order to biosecurity program still working. We are always talking about general of biosecurity such as cleaning, disinfection, traffic control, and etc. How if explain about human resource strategy so that biosecurity keeps running. Thank you very much	Changing behavior is always challenging and depending on the specific behavior we need to change. For general farm workers, creating routine that everyone follow seems to work well i.e. changing shoes. Adding simple tool to make biosecurity easier also works in our experience i.e. boot hanger (to dry the boots after scrubbing).
17	Is it advisable to do aerial disinfection every so often, like twice a week or every other day in broiler or layer farms as a Biosecurity Protocol Practice, in order to reduce also unnecessary use of antibiotics in preventing bacterial diseases?	I do not have experience with this practice. However, it doesn't seem like a good idea. Increasing moisture in the bird house may lead to many problems i.e. respiratory diseases, fungus, etc.
18	How do you manage the eggs that are treated with antibiotics during the withdrawal period?	Answered live.
19	Since many chicken farms sell their fecal material as fertilizer, do you have any suggestion on proper management of the fecal materials in order to limit the spread of antimicrobial resistant bacteria to the environment or community?	Do not use antibiotics during the production period before fecal material is collected and sold.
20	Is it advisable to do aerial disinfection in broiler and layer birds as a biosecurity measure and lessen the use of antibiotics in preventing stress and bacterial infection in animals	Answered live.
21	Is there cost of meat products increase for RWA? and how the solution for this?	About 20% when compare with normal meat product. RWA products are the choice and option for specific consumers.
22	Hws RWA in aquaculture sector in Thailand. Tqvm	Aquaculture sector responsible by department of fisheries

Appendix

SUMMARY OF FAO RESOURCES ON GOOD PRACTICES can be found [here](#)

["Economic analysis of enhanced biosecurity practices in three types of chicken farms in Northern Vietnam" from Pawin.](#)

Raised Without Antibiotic (RWA) and Farm Biosecurity by Dr Julaporn Srinha, Link to the presentation is [here](#)

Regional campaign to enhance farm biosecurity for small to medium-scale poultry farms, WAAW 2020 by Dr Achariya Sailasuta, Link to the presentation is [here](#)

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